

WEEK
AGO

BUSINESS WEEK

YEAR
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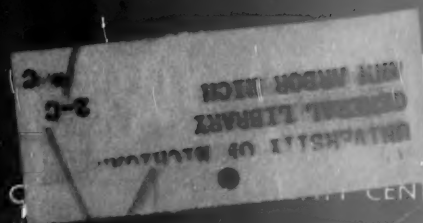
START
OF WAR
1939



Wanted: more materials from WPB
to fill WPB's car order (Page 26)

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PUBLISHED BY THE MCGRAW-HILL PUBLISHING CO.



WE ANNOUNCE "FLYING HORSEPOWER"

Now — in addition to the Famous Houdry Catalytic Cracking Process — Socony-Vacuum Announces a 2nd and 3rd Revolutionary Advance in Petroleum Chemistry. Soon — for America's Fighting Planes — Amazing New Gasolines will permit as much as 35% Higher Power Output from Aircraft Engines — 25% Heavier Bomb Loads or 15% Wider Cruising Range — as much as 30% Greater Yield of Aviation Base Stock.



PRESENT OCTANE
YARDSTICK CANNOT MEASURE
THE FULL POWER OF THESE
GREAT NEW SUPER-FUELS!

1 After bringing Eugene Houdry to this country, Socony-Vacuum pioneered with him the development of the Houdry catalytic refining process. We were the first company to produce 100-Octane gasoline in commercial quantities by catalytic methods. From this beginning has stemmed most catalytic refining, the *only method* by which 100-Octane aviation gasoline can be produced in the vast quantities needed by the United Nations' air fleets. Socony-Vacuum has produced up to now more catalytic cracked base stock for 100-Octane gasoline than any other company.

2 Today, the T. C. C. Process (Thermoform Catalytic Cracking), Socony-Vacuum's *second* great contribution in the refining of vital aviation fuels, is being installed in 20 American refining units (7 of them ours). The T. C. C.

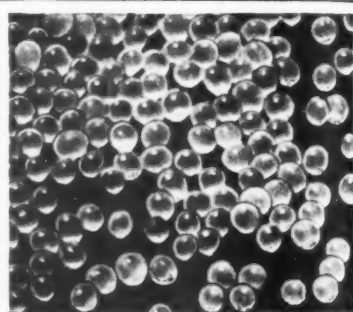
Process permits *continuous* catalytic refining, *improves the quality* and *increases the quantity* of 100-Octane base stocks. It requires less critical materials—steel and alloys—than any other catalytic process.

3 Close on the heels of the T. C. C. Process comes Socony-Vacuum's *third* revolutionary scientific discovery, the Synthetic Bead Catalyst, described in the picture here. For many years, 100-Octane (which means without knock) has been the standard of gasoline performance. 100-Octane has been a synonym for perfect. Now, Socony-Vacuum's sensational Bead Catalyst makes possible the production, in commercial quantities, of a *new and better gasoline*—as much as 35% more powerful than any present 100-Octane gasoline—so powerful it can be greatly diluted for use as an ingredient in 100-Octane gasoline. Even thus diluted, this remarkable fuel will give to aircraft a new, quick, maneuverability, speed, climbing power, and carrying capacity.

In one great raid on Berlin, it would have enabled the bombers used to carry 200 extra tons of

bombs. And—with the new "Flying Horsepower"—British pilots would have been able to fly 22,000 miles farther in one recent 24-hour period *without increasing their gasoline load!*

Socony-Vacuum's Synthetic Bead Catalyst for producing super gasolines—is being made available by license to the entire petroleum industry.



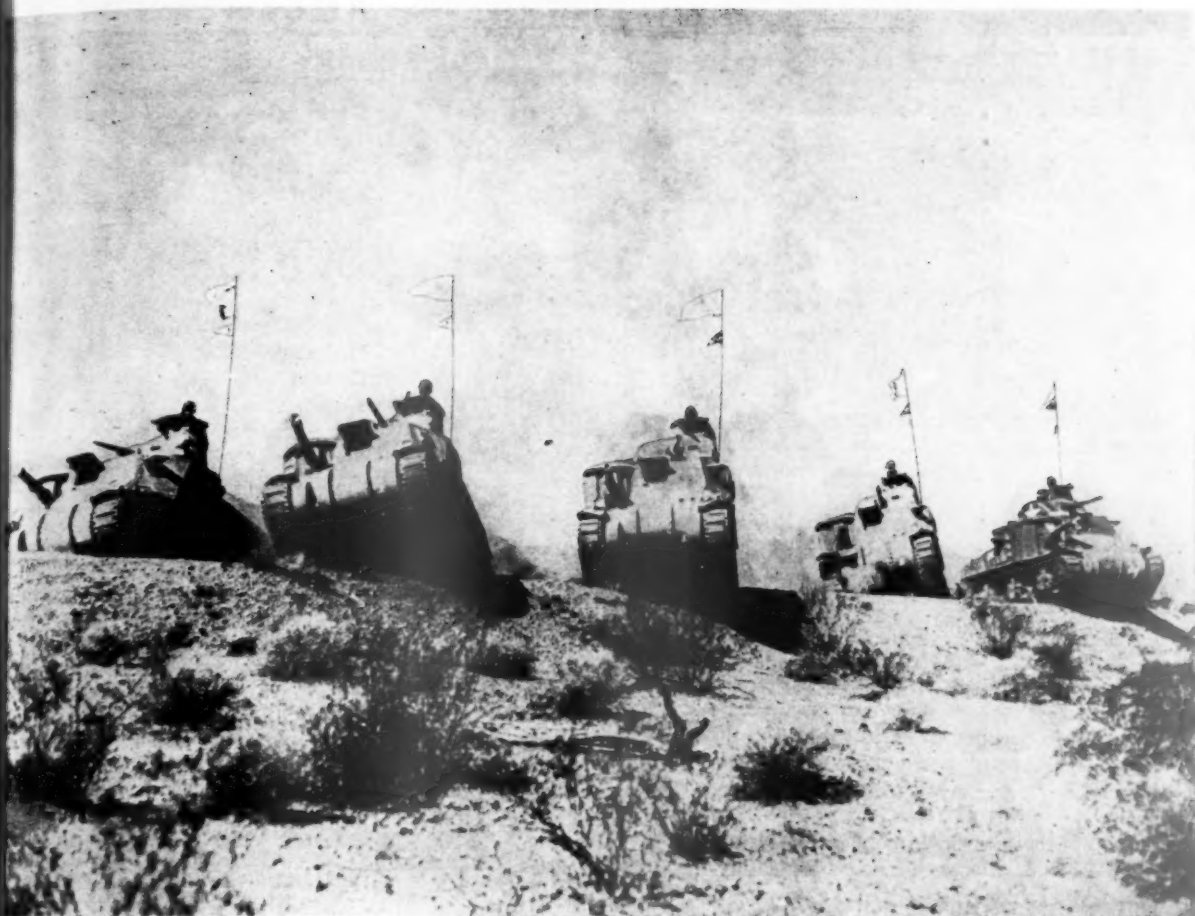
MAGIC BEADS!...Catalysis is defined by Webster as "a chemical change effected in a compound by an agent that itself remains stable." Socony-Vacuum's revolutionary new catalyst is a porous bead...looks much like a pearl, is iridescent in its original form. The gasoline cracking stock passes in a continuous stream through the porous beads, undergoes a remarkable chemical change, assumes octane and power values unknown before.

SOCONY-VACUUM OIL COMPANY, INC.

and Affiliates: Magnolia Petroleum Company

General Petroleum Corporation of California.





To a Tank-boiling is cool

...another job for HYCAR SYNTHETIC RUBBER

ENGINES of the type that power some of our tanks—and may power your post-war car—normally run at temperatures far above the boiling point of water . . . temperatures that would ruin ordinary rubber coolant hose.

Add the fact that anti-freeze solutions used as coolants in these engines contain rust inhibitors that attack rubber . . . and you have two big reasons why they are equipped with coolant hose of oil-resistant, heat-resistant Hycar synthetic rubber.

This is another case where the special advantages of Hycar make possible a rubber product that does things rubber never could do before. From such developments come new

ideas, new products, new markets, new jobs:

Perhaps your *own* need is for this same type of heat and oil-resistant rubber. Perhaps you need abrasion resistance, or resistance to extreme cold. Maybe you want high electrical resistance, hardness, softness, or some entirely special quality.

Whatever your need, Hycar, with its years of pioneer development behind it, *and its performance proven in the field*, is your headquarters for all products and problems in synthetic rubber.

Hycar is made in several types, supplied to fabricators in the form of crude synthetic rubber. We will be glad to work with you and your rubber products supplier in applying Hycar to your problems.

HYCAR CHEMICAL COMPANY

AKRON, OHIO

LARGEST INDEPENDENT PRODUCER OF BUTADIENE SYNTHETIC RUBBER IN AMERICA

RUBBER HELPS to BUILD

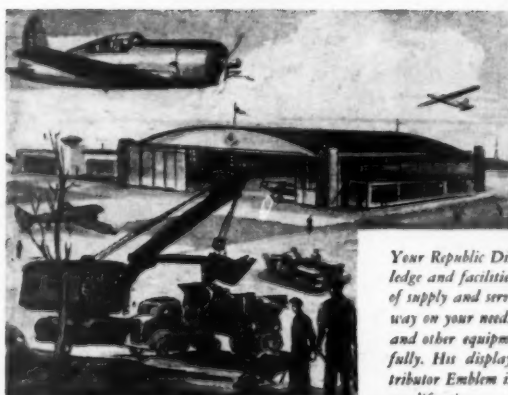
for
ARMIES for
NAVIES

THE achievements in construction engineering have added a new chapter to the great story of American war effort—shipyards, air bases, military highways, military camps. Thousands and thousands of men and shovels, tractors, trucks, concrete mixers, great dredges—all at full speed. On every one of these projects, rubber has performed important tasks.

Dredge sleeves and suction hose on dredging equipment, suction and discharge hose on pumps, pneumatic hose on drills and hammers, oxyacetylene hose for cutting and welding structural steel—all in constant use. Conveyor belts for spoilage excavation and for handling sand, rock and concrete aggregates, rubber transmission belts for shop machinery, water hose, packing, gaskets, air hose for divers, and even plumbing accessories, comprise some of the many mechanical rubber products required on these jobs.

Prompt replacement of rubber items and ever available service were and are vital to scheduled completion of these projects. Backed by factory technical assistance, the contribution of Republic Distributors to these projects cannot be overestimated.

WE ARE
PARTICIPANTS IN THE
OWNERSHIP AND OPERATION
OF
NATIONAL SYNTHETIC RUBBER
CORPORATION



Your Republic Distributor has the knowledge and facilities to provide advantages of supply and service available in no other way on your needs for mechanical rubber and other equipment. Utilize his services fully. His display of the Republic Distributor Emblem is your assurance of his qualifications.



REPUBLIC RUBBER

YOUNGSTOWN • OHIO

HOSE • BELTING • MOLDED GOODS • PACKING • EXTRUDED PRODUCTS
DIVISION OF
LEE RUBBER & TIRE CORPORATION

BUSINESS WEEK

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WASHINGTON BULLETIN

WHAT THE WASHINGTON NEWS MEANS TO MANAGEMENT

Doers Must Take the Blame

The President is having his troubles with Congress. Congress is more than living up to advance notices, but in asserting its independence of the executive, it may have moved a little too far for its own comfort.

Democratic leaders of both House and Senate have lost effective control over their members. Since Republican leaders are reluctant to assume responsibility, both bodies are stumbling along with a minimum of leadership.

The new spirit of independence has likewise started internal strife in Congress. In the lower chamber, a revolt of major proportions against the legislative powers that have been assumed by the powerful Appropriations Committee is under way. Committees in both houses are treading on each others' toes, and feelings between even members of the same party are bitter.

Meanwhile, individual members are definitely concerned. They are being blamed from home for the failure of Congress to enact pay-as-you-go tax legislation. In taking over the reins from the executive branch, Congress has found that it will also have to take the blame for failure to act, and many members are beginning to grumble over their critical mail.

Politics of the OCS Fight

An independent civilian supply agency now seems assured, whether by congressional or Presidential action.

Donald Nelson's hope of forestalling the Maloney bill to this end suddenly faded this week when Arthur Whiteside, president of Dun & Bradstreet, declined to accept the job as head of a revived Office of Civilian Supply in WPB unless Nelson grants him more authority than now proposed.

In the meantime, C.I.O. support pushed the Maloney bill along with a unanimously favorable report from the Senate Banking Committee. Chances of enactment are good.

Prospect now is that the President could not kill the measure by veto unless, acting on his own initiative, he set up a civilian supply administrator with more power than Nelson was willing to cede to Whiteside.

That Civilian Minimum Again

The Smaller War Plants Corp. has injected itself into the tangled civilian supply situation with a demand that WPB prepare for it an estimate of the civilian production that can be under-

taken without interfering with the war.

SWPC boss Robert Johnson believes that the chief hope for preserving small business lies in civilian rather than military production (BW—Apr.10'43,p17). He wants to know how much he can count on.

Top WPB officials now have a survey of needed civilian production underway, but it's not on a basis that's likely to satisfy Johnson. Vice-Chairman Ralph Cordiner is trying to determine the irreducible minimum that must be supplied even though it means diverting materials from munitions.

Fight Over Steel Testing

The Truman committee has stymied Donald Nelson's effort to offset the production drop resulting from the committee's exposure of falsification of steel plate tests by Carnegie-Illinois (BW—Apr.17'43,p98).

Ever since the committee announced its discoveries and turned them over to the Justice Dept., steel mill inspectors have been leaning over backward in rejecting plate, with a resultant drop in output which has been estimated as high as 35%.

Seriously disturbed, Nelson last week summoned company and government officials to a conference to consider specification revision. Meanwhile, he wired steel mills to avoid excessive rigidity in testing.

Any mills inclined to ease off at Nelson's insistence, however, must have thought it over again when the Truman committee announced that it would countenance no deviation from exact specifications, saying that if the specifications are too rigid the proper thing to do is to change them. The committee at the same time put the mills on the spot when it said it would ask any mill whose April production dropped to declare what part of the drop it attributed to the requirement that it comply with specifications.

Oil for the Armies

Making the Mediterranean safe for Allied shipping may relieve military demands for oil on our East Coast by winter. At least, the possibility deserves speculation. Those who know the facts aren't talking.

Montgomery's motorized Eighth Army was supplied with oil via the Suez



MISSION TO MEXICO

Washington will not be surprised if the Roosevelt call on President and Senora Avila Camacho—despite its outward show of friendliness—marks a stiffening of the Administration's attitude toward Mexico. Following a long period of conciliation (which included Mexico's expropriation of U.S.-owned

oil properties), Administration leaders have lately been dissatisfied with Mexico's war effort, particularly with the deplorable state of the government-operated railroads (page 16). To avoid ruffling currently amicable relations with our nearest Latin-American neighbor, the President decided to take his protest to headquarters behind the screen of a neighborly call.



There's a swing shift in Tokio, too



Japs have been called lots of things since Pearl Harbor. But nobody has called them "lazy."

Every one of their war plants is going to run twenty-four hours a day, seven days a week, until American planes scramble their machinery with well-placed "eggs."

In the meantime, the business of beating the production of Nip and Nazi arsenals is squarely up to American industry—its workers, its management, its research divisions.

If any of us think that is a light job, we're dangerously kidding ourselves. The Axis countries have been geared for war for years. They have made exhaustive studies of how to make the most of all of their materials—how

to get along with less—how to do without. America is just starting.

But, we're starting with the kind of spirit that only free men and women can have.

A typical segment of the American production front is the 4000 workers who are today engaged in making Ethyl antiknock fluid for use in high-octane military gasoline. These men and women are determined to make good their wartime slogan, "Every drop of Ethyl counts." And they are delivering it on time.

ETHYL CORPORATION

Chrysler Building, New York City

Manufacturer of Ethyl fluid, used by oil companies to improve the antiknock quality of aviation and motor gasoline



Canal and Cairo from oil fields and refineries in Iraq, Iran, and the Persian Gulf. If and when the Mediterranean is cleared of Axis raiders, it would seem possible for these same sources to supply Allied troops in any war theater along its coasts. The British-owned pipeline from Iraq to Palestine is still in working condition, and the branch through Syria could be put back in operation at any time.

Unknown (except to the military) are such factors as present refining capacities in that area. Another secret is how much Near East oil must be sent west to China and south to India. India and China formerly depended on Burma oil, now in Japanese hands.

Coal Versus Oil

The oil industry is quietly questioning continued insistence by Petroleum Administrator Harold L. Ickes and other government officials on converting from fuel oil to coal.

The oil men aren't starting any public controversy or stirring up the press, but they are asking for reconsideration in view of the improved outlook for oil transportation to the East Coast next winter. They argue that, while coal supplies were ample last year, coal takes more manpower right down the line through mining, transportation, firing, and ash disposal; that conversion of oil burners usually impairs boiler efficiency; that the easiest and cheapest conversions already have been made.

Pullman Loses a Round

Thurman Arnold, now a federal Circuit Court judge, has by proxy won the first round in one of the biggest anti-trust cases initiated under his regime as assistant attorney general.

A three-judge Circuit Court in Philadelphia has upheld Arnold's contention that the Pullman Co. violated the anti-trust laws by building cars and then allegedly monopolizing the servicing of them. A divorce of the two functions was recommended.

The Pullman Co. says it will appeal to the Supreme Court.

Postwar Rubber Plan

Washington is wondering whether, in presenting its Buna-S patents to the government, as it did this week, Standard Oil of New Jersey has turned over the postwar synthetic rubber industry to the government. Since the existing rubber pool already gives everyone free use of synthetic rubber patents during the war, the real significance of Standard's move, quickly followed by other companies,

Tempest in the Ink Pots

In addition to the routine factual announcements of government activities which funnel through the Office of War Information, that organization has two specialties of its own: (1) the fact-finding reports, such as the ones on combat performance of U. S. planes, the current doctor shortage, and drinking in Army camps, which are prepared by a group of 14 men under magazine writer Henry Pringle; (2) the campaigns of William B. Lewis, former vice-president of Columbia Broadcasting System, to save kitchen fats, grow victory gardens, or inform housewives on point rationing.

Which group is to provide the diet to sustain America's war spirit seemed to have been decided last week by a palace revolution that seated Lewis as policy adviser to Elmer Davis and caused the "fact writers" to resign.

The tempest in OWI's ink pots swirled into Congress where an investigation is likely to find out whether

"ballyhoo" or "facts" are to characterize OWI's output.

Newspapers and others critical of the OWI are watching to see what Lewis will do in restaffing his outfit. If he brings in a lot of high-pressure promotion men, they foresee trouble for Elmer Davis whose administrative shortcomings, frankly admitted by him, have been under suspicion ever since he came to Washington.

Davis, having made his decision, is standing pat. Lewis and his assistant, James Allen, a former Dept. of Justice publicity man who reputedly vetoed a lot of ideas of the ousted writers, aren't talking much either. Most of the writers who were fired already have magazine jobs where they will presumably be able to approximate their ideal of telling the whole truth.

Meanwhile the public will watch to see how much unadorned truth comes out of OWI as well as how much truth Mr. Davis is permitted to extract from his governmental sources.

with Firestone and Goodyear announcements leading off, lies in its postwar implications.

Standard's offer, which Rubber Director Jeffers has accepted, gives its patents to the government with the provision that, during the war, but not after, the Rubber Reserve Co. can license them for the life of the patents (to 1951) royalty-free to "everyone who cooperates with the government in its war rubber program and who reciprocates with similar licenses under its own patents." It also specifies that the government agree to carry on a \$5,000,000 research program on synthetic rubber.

Regulation Device?

Washington sees, as a result of the new rubber deal, a permanent, dominating patent pool in the synthetic industry—a pool controlled by the government and based in large measure on government research. In the capital, they are saying that the postwar planners who have been exploring the possibility of government regulation of industry through proprietorship of converted war plants (BW—Mar. 20 '42, p15) have been presented with a new regulation device—control through technology.

The Standard move, which has public relations angles in view of congressional attacks on the company's past connections with a German patent holder, has produced oil industry guesses that

Standard is interested in getting its hands on the patents of other companies, confident that, if postwar synthetic competition is put on a straight cost and sales basis, its size will give it a good competitive position.

Policy Questions

The government's new position in synthetic rubber has brought to the fore a whole series of policy questions—including the basic Anglo-American issue of whether our synthetic rubber industry is to be kept for postwar competition with British interests in natural rubber. At the moment, British opinion seems more or less reconciled to continued U. S. reliance on synthetic—and to making up the market loss here by new demands in other markets and by possible destruction and banning of German synthetic production.

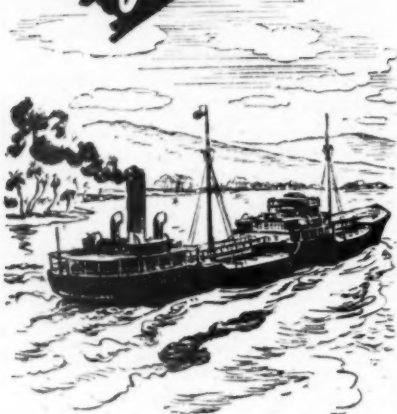
Funds for Postwar Highways

One piece of postwar legislation that is in sympathetic hands is the McKellar-Robinson bill for a billion-a-year highway building program, now before House and Senate road committees. The bill would authorize contribution of this sum to the states in each of the first three years after the war for urban and rural highways.

It's a peculiarity of highway legislation that authorizations bind the fed-

**STEAM Heats
America**

at war!



RECRUIT for the tanker fleet . . .

Giving oil the right of way . . .

Completing the bridge of ships.

The shipyards of America and the allied marine industries are meeting production schedules on the great new tanker fleet.

In the flow of materials to the shipyards—pumps, gauges, propulsion machinery, motors—steam heating is playing a vital role by properly heating supplying plants to insure maximum production.

Steam, harnessed and brought under control with Webster Steam Heating Equipment, is doing an outstanding heating job in thousands of war plants, providing economy and trouble-free operation, keeping workers efficient.

Today, Webster is engaged in direct war work and in supplying Steam Heating Equipment for buildings serving the war effort and essential civilian needs.

Repairs and replacements for Webster Systems are available under W. P. B. Order P-84.

Warren Webster & Company, Camden, N. J.
Representatives in principal U. S. Cities



WASHINGTON BULLETIN (Continued)

eral government; thus, if the bill passes, the states can start counting on the money. They'd be allowed to spend immediately for advance design, with a promise of reimbursement when the money becomes available after the war.

New Drive on Contract Fees

The government has been stymied in its efforts to exterminate so-called war contract brokers.

In several cases aired to date, the government has sought to bring them to book on allegations of exorbitant fees and unscrupulous methods. It has been hauled up short by a decision of the federal District Court for the District of Columbia in which Justice Bolitha J. Laws ruled that the issue hinges on whether the broker is a bona fide agent of the company.

Dept. of Justice lawyers say this is practically impossible to determine. They believe that this loophole can best be plugged by tightening up the present warranty clause in government contracts rather than by legislation.

Contractors should, in their opinion, be called upon to file affidavits stating the particulars under which fees are paid for service in obtaining contracts.

Priority Policemen

Washington has long toyed with the idea of using priority inspectors. They would be appointed by WPB to go into war plants, supplementing Army and Navy inspectors, to check on material use, compliance with Controlled Materials Plan procedures, etc.

Now that J. A. Krug is WPB's program vice-chairman, bossing all priority matters, the idea is cropping up again. Krug has been a foremost proponent right along.

Hard-to-Impose Ceilings

The President's hold-the-line order (BW-Apr. 17 '43, p. 15) saddled OPA with the messiest job it has had yet. Price Administrator Prentiss M. Brown is called on to slap ceilings on a lot of items that don't want to be ceilinged.

There are, for example, seasonal items like apples and other fresh fruits for which OPA just hasn't found a practical lid so far. Much the same goes for wheat, fresh fish, and milk for manufacturing purposes.

Then there are commodities like cotton that, for political reasons, are touchy. Several cotton orders have been torn up. The Dept. of Agriculture, with which OPA has to collaborate on farm ceilings, thinks a simple lid is an impossibility. Sales of Commodity

Credit Corp.'s cotton to prevent rising quotations may be the only feasible method.

And, in some cases, OPA lacks the know-how for effective action. This goes for restaurant prices (page 90).

Still other troubles arise from faulty initial action; top retail prices, in effect on beef, veal, lamb, and mutton since Apr. 12, have been suspended because they were too high. A new, revised list is due about May 17.

Meantime, Brown has ordered OPA's swarm of lawyers to quit writing price regulations and stick to legal advice.

Willow Run Pushes Ahead

Months behind schedule, Ford's Willow Run bomber plant will reach peak employment of 58,000 late in September. Ford originally planned on a total of 100,000 workers, but WPB's Aircraft Resources Control office slapped on a payroll ceiling which will necessitate extensive subcontracting.

Scheduled peak output of 400 Liberator (B-24) heavy bombers will be reached some months late. Ford officials blame the delay on constant inroads of Selective Service among the leadmen. If these key workers—some 4,000 among the present 40,000 employees—could be held together, they believe that none of their other manpower problems would prove serious.

Capital Gains (and Losses)

Topside personnel situation in OPA currently stacks up as follows: Deputy Price Administrator J. Kenneth Galbraith wants to resign, but not ahead of Lou Maxon, Prentiss M. Brown's right-hand man; Maxon wants to resign, too, but doesn't want to quit before Galbraith. Maybe Administrator Prentiss Brown will beat them to the exit. He's worn out, with a spell in the hospital ahead of him.

In petitioning the Interstate Commerce Commission to exclude less-than-carload rail freight rates from the reduction effective May 15, the common carrier truckmen argue that the forced reduction in their rates would result in losses which they, unlike the railroad, have no chance to recoup from profitable traffic.

Of the wage increase requests submitted to the National War Labor Board since last October's wage-freeze, 72% were submitted voluntarily by employers; 29% were joint employer-employee requests; and only 1% originated with labor alone.

—Business Week
Washington Bureau

FIGURES OF THE WEEK

THE INDEX (see chart below) *204.1 †203.7 201.0 188.7 177.9

PRODUCTION

Steel Ingot Operations (% of capacity).....	99.1	98.8	99.1	101.0	97.6
Production of Automobiles and Trucks.....	19,155	18,080	18,010	20,225	21,720
Engineering Const. Awards (Eng. News-Rec. 4-week daily av. in thousands)....	\$13,382	\$13,456	\$12,749	\$24,529	\$29,851
Electric Power Output (million kilowatt-hours).....	3,917	3,882	3,947	3,717	3,308
Crude Oil (daily average, 1,000 bbls.).....	3,907	3,949	3,904	3,902	3,545
Bituminous Coal (daily average, 1,000 tons).....	2,067	2,027	2,100	1,910	1,852

TRADE

Miscellaneous and L.C.L. Carloadings (daily average, 1,000 cars).....	80	81	76	88	83
All Other Carloadings (daily average, 1,000 cars).....	51	52	52	64	53
Money in Circulation (Wednesday series, millions).....	\$16,424	\$16,353	\$16,115	\$13,932	\$11,624
Department Store Sales (change from same week of preceding year).....	+28%	-7%	+3%	+26%	-12%
Business Failures (Dun & Bradstreet, number).....	89	92	97	132	224

PRICES (Average for the week)

Spot Commodity Index (Moody's, Dec. 31, 1931 = 100).....	247.0	247.3	248.0	233.4	231.6
Industrial Raw Materials (U. S. Bureau of Labor Statistics, Aug., 1939 = 100)...	160.0	159.9	159.5	155.6	153.9
Domestic Farm Products (U. S. Bureau of Labor Statistics, Aug., 1939 = 100)...	209.0	208.3	207.6	185.5	185.2
Finished Steel Composite (Steel, ton).....	\$56.73	\$56.73	\$56.73	\$56.73	\$56.73
Scrap Steel Composite (Iron Age, ton).....	\$19.17	\$19.17	\$19.17	\$19.17	\$19.17
Copper (electrolytic, Connecticut Valley, lb.).....	12.000¢	12.000¢	12.000¢	12.000¢	12.000¢
Wheat (No. 2, hard winter, Kansas City, bu.).....	\$1.37	\$1.39	\$1.39	\$1.20	\$1.14
Sugar (raw, delivered New York, lb.).....	3.74¢	3.74¢	3.74¢	3.74¢	3.74¢
Cotton (middling, ten designated markets, lb.).....	21.13¢	21.15¢	21.16¢	18.96¢	20.26¢
Wool Tops (New York, lb.).....	\$1.332	\$1.322	\$1.290	\$1.240	\$1.291
Rubber (ribbed smoked sheets, New York, lb.).....	22.50¢	22.50¢	22.50¢	22.50¢	22.50¢

FINANCE

90 Stocks, Price Index (Standard & Poor's Corp.).....	90.3	89.3	86.7	74.5	61.8
Medium Grade Corporate Bond Yield (30 Baa issues, Moody's).....	3.97%	3.97%	4.01%	4.24%	4.26%
High Grade Corporate Bond Yield (30 Aaa issues, Moody's).....	2.76%	2.76%	2.76%	2.80%	2.83%
U. S. Bond Yield (average of all taxable issues due or callable after twelve years)	2.32%	2.32%	2.33%	2.33%	2.33%
Call Loans Renewal Rate, N. Y. Stock Exchange (daily average).....	1.00%	1.00%	1.00%	1.00%	1.00%
Prime Commercial Paper, 4-to-6 months, N. Y. City (prevailing rate).....	1-1/4%	1-1/4%	1-1/4%	1-1/4%	1%

BANKING (Millions of dollars)

Demand Deposits Adjusted, reporting member banks.....	33,009	32,955	32,385	28,183	24,725
Total Loans and Investments, reporting member banks.....	42,250	41,646	42,198	35,908	31,502
Commercial and Agricultural Loans, reporting member banks.....	5,594	5,610	5,802	6,353	6,948
Securities Loans, reporting member banks.....	1,168	1,008	907	802	846
U. S. Gov't and Gov't Guaranteed Obligations Held, reporting member banks...	29,475	28,998	29,343	22,149	16,446
Other Securities Held, reporting member banks.....	3,211	3,213	3,296	3,495	3,724
Excess Reserves, all member banks (Wednesday series).....	2,160	1,980	2,126	2,713	2,886
Total Federal Reserve Credit Outstanding (Wednesday series).....	7,104	6,848	6,699	4,042	2,415

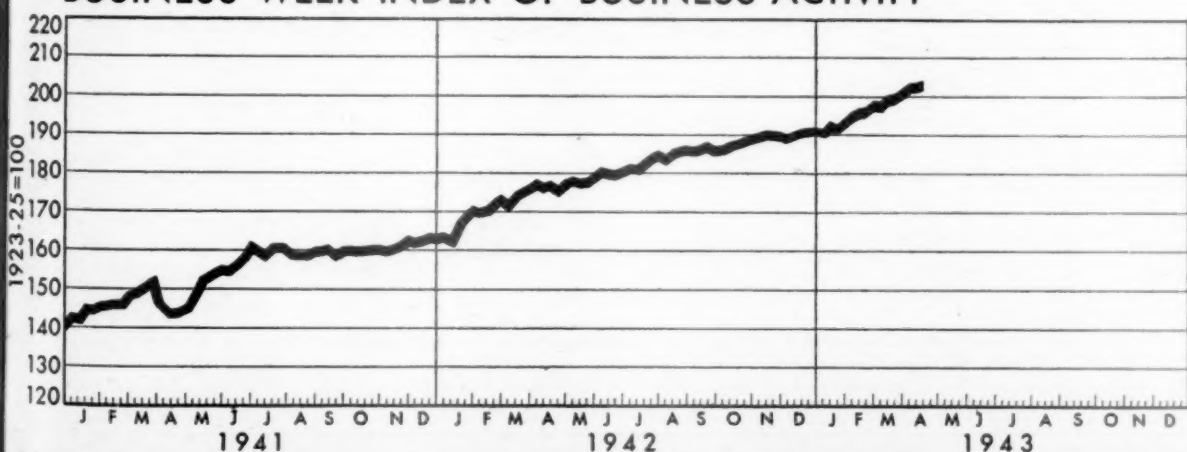
Preliminary, week ended April 17th.

† Revised

§ Ceiling fixed by government.

§ Date for "Latest Week" on each series on request.

BUSINESS WEEK INDEX OF BUSINESS ACTIVITY





A new building of the Bell Telephone Laboratories

Reason for Confidence

MORE than ninety per cent of American scientists are engaged in beating the Germans and Japanese.

More than ninety per cent of American scientific laboratory facilities are devoted to the same task.

American scientists are working at this job six or seven days a week, long hours, with few interruptions.

They are getting somewhere, too.

Every now and then the Germans and the Japanese have an unpleasant surprise.

They find that American science has caught up with them and passed them.

It is reassuring to us and discouraging to our enemies, for American scientific

facilities are the greatest in the world. And they are functioning.

Little by little, some of the things that have been developed become public, but most of them you won't hear about until after the war.

But now, without the details, you can have faith that American research — industrial and academic combined — is rapidly giving our fighting forces an advantage.

Along with other American industry the Bell Telephone System has its own Bell Laboratories — the largest in the world — working overtime for victory.

BELL TELEPHONE SYSTEM



Your continued help in making only vital calls to war-busy centers is a real contribution to the drive for victory

THE OUTLOOK

Eating into Inventories

Easter sales hasten merchants' progress toward bedrock on stocks. Steel troubles illustrate effect of war strain on the economy. Production rising but due to flatten out.

As the withholding tax crept nearer action and the War Loan Drive soared towards its goal (page 110); as still newer manpower rules were released and reduced civilian food estimates announced (page 15); as farm pressure in Congress for price boosts started up again and labor bargaining for coal-mine wage raises dragged on; as the war production bottleneck in components (page 15) appeared widened and another in steel plate threatened to develop, the war economy this week continued to drop problems on the executive's desk.

None of this home-front news upset expectations. Indeed, it is obvious that we must look for more of the same.

Civilian Supplies Shrink

From new, albeit rough, figures on military food takings (page 38), for instance, it is clear that civilian supplies will continue to shrink. Word of the new cut in food hopes spotlights the shrinkage in consumer goods generally. For it came in Easter week, when shoppers again were flocking to stores to buy spring apparel and pick up other purchases on the way; indeed, April may tilt sales curves up once more (page 92).

Despite heavier-than-ever ordering by retailers—"soft goods" orders are 250% of sales—receipts of new merchandise still do not keep pace either with current sales or with the stores' 1942 purchases. So inventories still are being drained away—a process that temporarily supports living standards at levels above the current flow of new production.

But the Dept. of Commerce reports that retailers had 7% less dollar-value inventory in February than a year earlier, and wholesalers 17% less. Price gains since 1942 mask the much sharper drop in actual physical stock-piles. Liquidation will begin to halt short of that minimum inventory that merchants must have on hand in order to maintain day-to-day sales. After Easter, that point may not be long in coming.

Steel Problems

The steel plate problem, which originated in a Truman committee disclosure of a case of defective inspection, drew from WPB Chairman Donald

Nelson a warning to producers not "to lean over backward" so far as to cripple output. However large may have been the drop in plate production, it illustrates the vulnerability of a strained economy to disturbing influences.

The lag in building new mills, due to such bottlenecks as that in turbo-blowers, has already cut 1943 steel output estimates by 1,000,000 tons to 92,000,000, and new furnaces may merely supplant old ones shut down for long-needed repair.

Weather vs. Demand

Now, iron ore tonnage equal to a month's consumption has been lost to a delayed opening of Great Lakes shipping (page 46); though this may be made up later, weather can plague ore supply all summer into an early autumn.

As against this, claimant agencies under the Controlled Materials Plan want for the third quarter 35% more carbon steel and 50% more alloy than can be supplied.

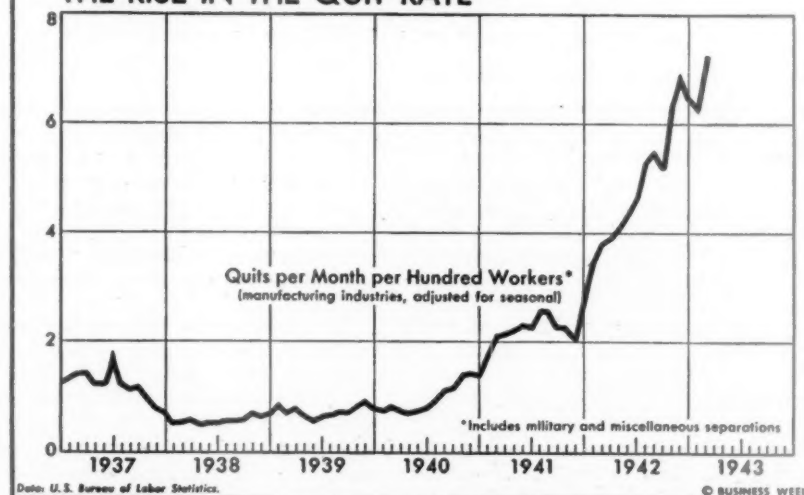
This demand hardly augurs an expansion in civilian durable output. Yet Washington, as well as business, must plan in terms of some reconversion—and not just because each month marks a closer approach to Nazi defeat (BW—Apr. 3 '43, p13). For more refrigerators, hardware, laundry equipment, and the like may be needed even to keep civilians working at top efficiency for the war and certainly will be required for the devastated areas we liberate in the "big push" we now prepare.

Gravy Draining Out

Business Week's Index this week hit 204.1, and 210 seems certain by mid-year, with a flattening thereafter. For, due to the manpower shortage, prospects in many other basic materials lines look even worse than those in steel.

Lumber is a critical example of this. The output goal for 1943 is 32 billion b. ft.—just about the actual 1942 output

IN THE OUTLOOK: THE RISE IN THE QUIT RATE



From the standpoint both of the nation and of the individual employer, labor turnover continues as the worst of wartime personnel headaches; by comparison, absenteeism (page 98) is a mild one. Newest sanction for dealing with job-shifts is this week's "freeze" (page 14); established local job-stabilization rules have had little force. As the chart shows, seasonally adjusted quit rates in manufacturing

have soared to 87% of total payrolls, on an annual basis, and in less essential or poorer-paying lines, the turnover has been even higher. The draft causes perhaps 20% of this, and the labor shortage requires some constant shifting to maximize use of workers' skill, strength, adaptability. But, many quits to find better pay or living conditions simply waste man-hours during searching-time and retraining-time.

and also the estimate of 1943 essential requirements. But, the first-quarter lumber cut ran 10% to 15% below 1942, and shipments continue to be drawn from stocks. Even this cushion will soon be absorbed; early 1942 mill stocks of 7 billion b. ft. are down to less than 4 billion now.

This only illustrates the artificial gravity in current materials flow. Producers of steel and nonferrous metals, as well as of foods, textiles, paper, chemicals, etc., are drawing on stocks to meet shipments.

Not only over-all industrial output, but also war production itself will flatten out in another six months, with the peak war spending rate around \$100,000,000,000 to \$110,000,000,000 a year.

Tied to the Ceiling

Producers still are watching for Office of Price Administration interpretations of President Roosevelt's "hold-the-line" order for industrial prices. By now, with the extension of price-enforcement machinery and of allocation controls over demand and distribution during the past year and more, industry is completely tied to ceiling regulations. "Hidden" price-boosting practices have completely run their course, and actual charges for some time have been about as stable as the "official" prices.

Unions Fight Back

Elimination of inequity as basis for pay rises, resulting from hold-the-line order, stirs flood of protests.

The tightened controls over the labor market, which were established by President Roosevelt's hold-the-line order and by derivative regulations promulgated by the National War Labor Board and War Manpower Commission, have strained union support of the Administration almost to the breaking point.

• **Nowhere to Go**—If there were an opposition camp in which organized labor could find a welcome, the A.F.L., the C.I.O., and the railroad brotherhoods would by this time have taken a walk. But, because there is no place for labor to go and because it isn't advisable to snipe directly at the President, instead of criticizing him, they have centered a scathing attack on his deputies who carry out the White House policies in National War Labor Board, the War Manpower Commission, the Office of Economic Stabilization, and the Office of Price Administration.

The blow that hurt labor worst was dealt by the NWLB. That agency, divested by the executive order of power to raise wages on the grounds that in-



Vernet Witham felt the impact of the federal employment stabilization policy this week. She was ordered from her new job of pretzel bending back to an Elizabeth (N. J.) shirt factory.

equities or inequalities exist or that adjustments are necessary for the effective prosecution of the war, has had no alternative except to clear its docket of about 10,000 pending cases in which pay increases were demanded on these terms.

• **Count on Rank and File**—Under the executive order, the unions must painstakingly recast all claims for more pay, proving that these are justified by substandard living conditions, before the board is even allowed to consider them. With a great straining of logic and a tempering of figures, labor statisticians are doing just that, but union leaders are not too hopeful that many convincing cases can be presented.

Nor are the protests all vocal. A flurry of strikes—all of them disavowed by the top leaders—have emphasized union discontent. A strong suspicion exists that a number of the more recent stoppages have had behind-the-scenes approval of the leadership.

• **One Example**—Either such tacit support from above encouraged the strike at Universal Atlas Cement in Universal, Pa., which ended this week, or the officials of C.I.O.'s Mine, Mill, and Smelter Workers Union were particularly lackadaisical in disciplining the headstrong local, for a five-day "outlaw" walkout is highly exceptional. Universal Atlas was the first case NWLB decided under the hold-the-line order, and the cement workers had been awarded less than half of what a board referee recommended (BW-Apr.17'43,p15).

But, whether unofficially supported or not, the Universal Atlas walkout provided the text for labor preachments at NWLB and OES. Prophesying calamitous developments if the Executive Order stood unamended, unionists warned Economic Stabilization Director James F. Byrnes and NWLB Chairman

William H. Davis that Universal Atlas would be only the first of a long series of local outbreaks.

• **Temporary Solution**—So determined were the labor protests that Byrnes and Davis commissioned NWLB Vice-Chairman George Taylor, who is the board's wage expert, to draw up a memorandum on how much "damage" had been done by the Executive Order's elimination of inequities as a basis for sanctioning pay boosts. Nothing much is expected to result from the Taylor memo—at least not until John L. Lewis and the coal operators have finished their fight over wage scales for miners.

In the meantime, A.F.L. and C.I.O. officials are demanding that OPA roll back a few prices. They feel not only that such action was implicitly promised in the Roosevelt order but also that some such token will be necessary to convince members that the anti-inflation sword has two edges.

• **Job-Change Rules Hurt**—Harassing the sorely tried union chiefs still further are the new rules on job transfers laid down by the War Manpower Commission. Commissioner Paul V. McNutt took pains to make clear that he was unhappy about them but that the President's order contained an unequivocal directive.

Like management, labor is not under illusions that restrictions on job transfers can be rigidly enforced by WMC's inadequate staff. But (again like management) labor fears that zealous regional offices of the WMC will be snooping for a few violations which may be cracked down on as examples for both employers and employees.

• **How the New Rules Work**—In substance, the new hiring rules put no restriction on hiring workers engaged in nonessential occupations but ban the employment at a higher rate of pay of workers who, within 30 days of being hired, have been engaged in essential work. In labor markets where WMC approved employment stabilization plans are in effect, however, an employer engaged in an essential activity may hire new employees without restrictions on the rates of pay if such hiring is permitted under the stabilization plan.

The unions feel that the enhanced bargaining power they derive from full employment will be largely negated if the worker's opportunity to move to another job is curtailed. Under a "necessary-for-effective-prosecution-of-the-war" justification, numerous wage increases have been awarded to unions whose members in an essential industry were being attracted to higher paying work (BW-Apr.17'43,p106).

• **Compulsory Service?**—But perhaps the principal reason for labor's hostility is the fear that the new regulations are a big step toward national service by decree. All unions consider that national service is as opposed to their interests as indentured servitude would be.

Making the Parts to Win

Components problem licked—as far as it can be licked—by Wilson's emphasis on scheduling and early orders; one-third of the original 34 items to be dropped from the critical list.

Aircraft production, recovering from a two-month slump, shot upward in March and will do so again in April. Escort vessel production is beginning to roll, though it is still far short of what is needed. Rubber Director William M. Jeffers, deeply pessimistic at the turn of the year, now proclaims jubilantly that the synthetic program will be over the hump in a few months. Merchant ship building is steadily increasing its margin over sinkings. The high-octane gasoline program is not yet satisfactory to the Army or to Petroleum Administrator Harold Ickes, but WPB officials insist it is catching up on its schedule.

● **Matter of Parts**—These top priority production programs were all in tough shape early this year (BW—Jan. 23 '43, p15). An important reason for the encouraging shape they are in now is the success achieved in widening production bottlenecks in the so-called critical common components. These are the basic standard parts and fittings that go into all sorts of things from airplanes to rubber plants.

Little things like high-pressure valves,

big things like turboblowers the size of a house—they are almost all standard peacetime products, and in many cases expansion of their supply had been overlooked in the rush to expand facilities for the new wartime goods—guns and planes and ships. But when production of guns and planes and ships was getting into big numbers it was discovered that inability to obtain the standard items was setting the limit on production of war stuff.

● **Wilson's First Problem**—This was the first major problem that Charles Wilson tackled when he was made production vice-chairman of WPB. He picked out 34 types of components—Parker fittings, aircraft engine gears, aluminum forgings, hand tools, fans and blowers, compressors, heat exchangers, welding rods, ball bearings, etc. These entered into two or more of the high-priority production programs (13 of them entered into all five); the demand for all of them exceeded the supply.

Wilson believed he could break the back of the problem in three months, and he and his right-hand man, Vice-

Chairman Ralph Cordiner, have spent the bulk of their time on it. They believe now they have it licked—at least to the extent of proving it can be licked. It will never be licked finally; as soon as one bottleneck has been broken, something else becomes the bottleneck. But Wilson no longer feels it necessary to keep personal charge of the components problem, has turned it over to the new scheduling policy bureau which reports to Vice-Chairman J. A. Krug.

● **Some to Be Dropped**—Of the 34 original critical common components, about one-third are now in shape to be dropped from the critical list in a month or two. Total production of the 34 components this month will be about 75% greater than in December, WPB officials estimate.

This increase wasn't achieved by any one method. Each component had its own special problems. But there were certain common factors. For one thing, no new factories were built. The emergency was an immediate one, and there wasn't time. And Wilson saw adequate scheduling as the biggest need of nearly all the components. No one was certain how many of the components would be needed. Users weren't placing their orders soon enough. Orders were bunching up on some producers while others stood idle. Production schedules were constantly being upset by the receipt of new high-rated orders which had to be fitted in somehow. Deliveries were being

For the Civilian—6% Less to Eat

The Dept. of Agriculture has decided that its earlier estimates of food available for civilian consumption in 1943 (BW—Feb. 27 '43, p18) were too rosy in spots. In the light of prospective plantings, the food goals—on which the prior report was largely

based—won't be met in all instances, thereby bringing the civilian's expected share down a bit.

As things stand now, the total volume of expected food in 1943 will be about 3% more than record-breaking 1942. Because of government de-

mand, however, the civilian portion will drop 6% below 1942.

Below are the Bureau of Agricultural Economics figures for 1942 per capita civilian consumption (in pounds), together with the old and the revised estimates for 1943:

Commodity	1942	Old 1943 Esti- mate	New 1943 Esti- mate
Total meats (dressed weight) ¹	140	138.3	124
Fish			
Fresh, frozen	5.7	.....	5.6
Canned fish	3.3	.....	2.4
Cured fish	0.8	.....	0.6
Poultry products			
Eggs	40.0	38.2	39.9
Chickens	21.9	29.4	28.4
Turkeys	3.8	4.1	3.9
Dairy products			
Total milk	854.1	773.2	770.5
Butter	16.0	12.8	12.7
Cheese	6.4	4.8	5.7
Canned milk	19.7	16.1	16.8
Ice cream	15.2	10.0	9.5
Dried whole milk	0.13	.....	0.09
Malting	0.15	.....	0.18

Commodity	1942	Old 1943 Esti- mate	New 1943 Esti- mate
Fluid milk, cream ...	381.1	408.3	396.7
Fats, oils (except butter)			
Lard	14.0	15.5	14.0
Vegetable cooking fats	8.9	8.8	8.5
Margarine	2.3	4.6	3.6
Other food products	8.5	7.4	7.6
Total fats and oils ..	33.7	36.3	33.7
Fruits (fresh)			
Citrus	55.2	66.4	53.9
Apples	32.9	37.8	35.9
Other	46.1	45.2	41.5
Canned fruits ²	15.5	6.8	7.6
Canned juices	6.1	5.9	5.9
Frozen fruits	1.5	1.6	1.7
Dried fruits ³	4.1	5.0	4.1
Vegetables (fresh)⁴			
Leafy, green, yellow ..	81.7	69.6	68.9

Commodity	1942	Old 1943 Esti- mate	New 1943 Esti- mate
Tomatoes	25.9	25.8	25.1
Melons	33.3	27.6	24.5
Other	65.9	57.2	54.6
Canned vegetables ⁵	40.9	23.9	29.7
Potatoes ⁶	125.1	129.2	129.7
Sweet potatoes ⁶	21.4	26.9	21.6
Beans, dry edible ⁶	8.4	7.3	7.9
Sugar ⁶	87.3	62.2	68.5
Grains			
Wheat	224.2	231.6	240.8
Rye	3.9	3.9	4.4
Rice ⁷	6.2	5.4	4.9
Corn	74.7	71.4	73.7
Oats	7.9	8.0	8.0
Barley ⁸	27.2	27.0	27.8
Coffee	13.5	9.6	9.6
Tea	0.5	.....	0.2
Cocoa	3.4	3.2	3.0

¹ Per capita consumption for 1943 is for the entire year, which is slightly higher than the current ration allotment.

² Pack-year basis.

³ Includes estimated market garden produc-

tion. Since no data are available on farm garden production, per capita estimates are based on urban population.

⁴ Fiscal year basis.

⁵ Crop year basis.

⁶ Refined basis. The 1943 figure is based on present rationing allotment.

⁷ Milled basis.

⁸ Includes malt liquors, malt extract, and other food products.



HITLER'S SCRAP

Scrap salvage operations are as important on the battlefield as at home (BW—Apr. 10 '43, p. 80)—a fact realized by both the Axis and the United Nations. Thus when Britain's Eighth

Army captured Tripoli, it also collected rich booty in Axis scrap at Castel Benito Airdrome (above). Rubber, engine parts, wings, and fuselages from wrecked aircraft are being shipped for refabrication before they are returned to the enemy—in battle.

demand months before they were needed.

• **Scheduling Required**—Wilson took two general steps. He issued the scheduling order, M-293. This required eleven component producers to report regularly their orders, deliveries, and capacity. Some of them were required to submit monthly production schedules to WPB for approval. And in specially critical cases, where the volume of orders was not impossibly large, WPB required placement of all orders cleared through it.

Then, to force out hidden orders, Wilson slapped down a deadline, announced that all orders for critical components for delivery in the first half of 1943 must be placed by Feb. 6. This turned out to be something of a bluff. Orders have continued to be received. But it did squeeze out a lot of pending orders.

• **Valve Output Doubled**—Beyond these steps, it was a matter of individual treatment. Valves are a good example. These presented one of the toughest problems. Estimated demand for 1943 was about three times the visible capacity. And there are thousands of types and sizes. Besides being the toughest problem, valves have shown the most spectacular results. Output this month will be twice that of December.

Standardization was perhaps the biggest single step. The Navy particularly, but other war industry valve users too, had got into the habit of specifying all sorts of odd sizes and specifications.

WPB put the pressure on the procurement agencies to stick to standard sizes—with considerable success.

• **Given Materials**—An immediate step, of course, was to see that the valve manufacturers were assured, under the Production Requirements Plan and the Controlled Materials Plan, all the material they could use. They were given quick deliveries on a few critical machine tools to open up bottlenecks in their own production lines. All the producers were pressed to subcontract as much simple work as possible, and several new producers were brought in. In particular, the Navy arsenals were encouraged, when they really needed special-design valves, to make them themselves.

Although scheduling was less important on valves than on some other components, orders were extensively redistributed. It was found that certain manufacturers with whom Navy and Maritime Commission were used to doing business were overloaded while other firms had idle capacity. WPB agents went around the plants and took care of this job.

• **Different Problem**—Pumps presented a different case. They were just barely on the critical list; production was meeting the need but with no margin to spare. Here scheduling was the main thing. The pump producers had the capacity to build the pumps that were needed in April, but they couldn't do that and build ones needed next November too. Order boards were gone over

and realistic delivery dates established. Then the order boards were frozen, and not even an AAA priority rating was allowed to disturb them. A production increase of about 15% was achieved by this means—enough to put pumps in comfortable shape.

Heat exchangers presented another sort of problem. The producers, it was found, were working 30% under capacity because they couldn't get the miles of pipe that go into these units. Trouble was that, although heat exchangers use about 3% of the output of the pipe mills, the orders come through in small lots. The pipe orders are big enough to be rolled, but they're too small to interest the mills. The solution here was simply to put pressure on the pipe mills to give better service to the heat exchanger people.

• **Few Producers Equipped**—On turbo blowers, no very spectacular actions were taken. Only a few firms have the tools to build these huge fans. Orders are small, and they have been scheduled by WPB for a long time. However, some additional capacity had been laid down last summer and began to come in late last year. Also, the general scheduling order facilitated the scheduling operation by making it possible to protect production schedules against disruption by high-rated orders. A combination of these factors produced an output increase of about 30%.

Buenos Amigos

Meeting of Roosevelt and Camacho symbolizes joint effort in war that is bringing a boom in Mexican business.

President Roosevelt's junket into Mexico was a hands-across-the-border gesture of more than political significance. President Avila Camacho was shaking hands with the head of a state that has bestowed a rather hectic wartime industrial boom on the United States of Mexico.

• **A Year in the War**—It is nearly a year since Mexico felt the first shock of war. On the night of May 13, 1942, the tanker *Portero del Llano* was torpedoed off the coast of Florida. Mexicans realized then that their nation was in the war, playing for keeps.

War brought a revolution to Mexico, but in a form somewhat different from the political revolutions that have marked earlier decades of this century. This time the revolution came from outside, impinged upon Mexico's trade, poured speculative and U. S. government money into industry, mining, and transport.

• **Cost Index Jumps**—Money in abundance went begging for merchandise,

forcing prices of consumer goods over insufficient anti-inflation stopgaps. The cost index of 28 articles of consumption soared from 128 in 1939 to 165 in December, 1942.

Although Mexico is a growing country, about one-fourth the size of Brazil with nearly half the population, it is dwarfed by the United States. Its national income is only equal to one and one-half billion American dollars, but this is a three-fold expansion since 1929, with 30% of the advance a result of money inflation.

● **Industries' Standing**—Manufacturing accounts for half of Mexico's total production. In the last economic survey, agricultural output totaled \$115,000,000; forestry products, \$9,000,000; mining production, \$103,000,000; petroleum products, \$36,000,000; and manufacturing, \$256,000,000. Roughly 35% of Mexico's production is exported.

Washington is advancing close to a hundred million dollars to spur output of war essentials. In 1941, the Export-Import Bank provided \$30,000,000—to be made available in \$10,000,000-a-year lots—for the improvement of roads. Important sections of the Pan-American highway are under construction (BW—Apr. 3 '43, p. 92), and connecting highways to facilitate inter-regional movement of agricultural and mining products are being built.

● **New Steel Plant**—Mexico's steel industry has received a \$6,000,000 boost, and a new plant at Monclova, Coahuila, is in production with an annual capacity of close to 125,000 tons (\$10,000,000 in lend-lease money has gone to Mexico).

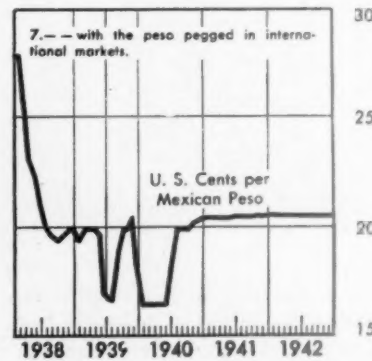
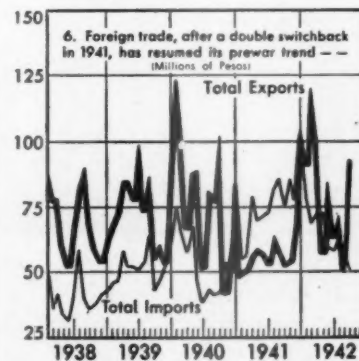
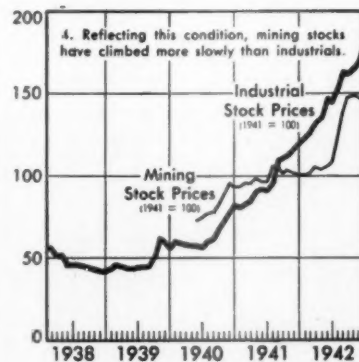
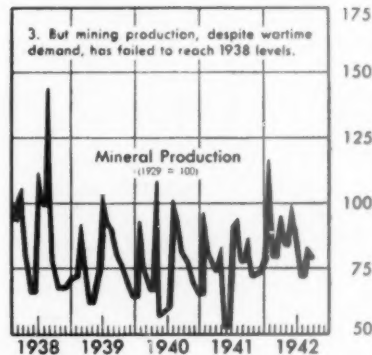
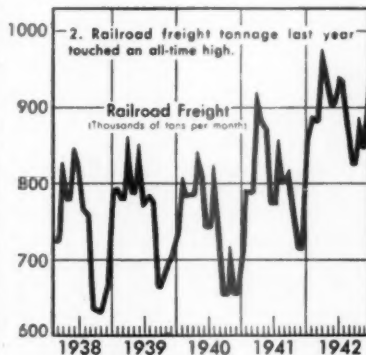
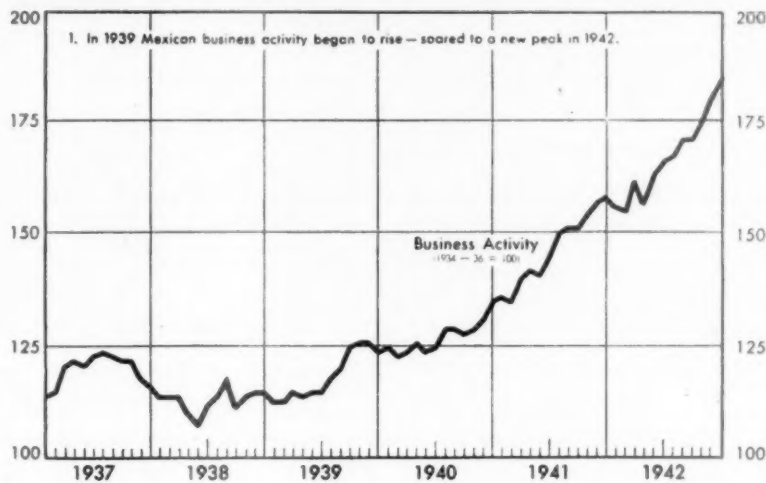
The pressure on Mexico's creaky railroad system was emphasized when Gulf shipping came to a virtual standstill last year. Mexican railroads have purchased 140 steam locomotives; are looking for 50 more, plus two 44-ton diesel engines; have obtained 150 40-ton stock cars, 150 50-ton gondola cars, 1,000 50-ton boxcars; and seek another 1,000 freight cars and 300 tank cars.

● **Favorable Balance**—Since the war, even more than before it, trade has been largely with the United States, dribbles coming and going between other Latin-American countries and Mexico. For the first time in this century, 1941 trade was marked by an excess of imports over exports—largely due to reduced petroleum shipments through the Caribbean and to a drop in gold sales to the U. S. from around \$25,000,000 to \$6,000,000.

On the other hand, imports skyrocketed under forehanded buying of materials in the U. S. as the war approached and available goods declined. Some producers and distributors stocked several years' supplies.

● **Farming, Mining Boom**—In Agriculture, with rising food prices an incentive to output, 1941 crops hit new

MEXICO FEELS THE IMPACT OF WAR



Data: Bank of Mexico, League of Nations, Revista de Estadística, Revista de Economía.

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levels which were maintained generally through 1942.

Mexican mining production is at capacity levels with Defense Supplies Corp. and Metals Reserve Co., both Reconstruction Finance Corp. subsidiaries, contracting for Mexico's exportable surpluses of mercury, zinc, tin, manganese, lead, tungsten, and antimony. Hundreds of thousands of tons have moved north to speed U. S. war production.

• **New Industrial Projects**—Money has flowed at a rapid rate into new enterprises. During the first nine months of last year, 124 new mining properties were opened. A recent \$12,000,000 investment in copper mines in the State of Sonora is aimed at making available additional copper for smelters at Douglas, Ariz. Gold production continues to play an important role in maintaining Mexican foreign balances.

In three months of last year, \$5,500,000 was invested in six new corporations registered with the Ministry of finance. Most important was Celanese Mexicana, S. A., an artificial-fiber producer. Glass, porcelain, film, chemical plants are appearing. Textile and hardware companies have been established in the capital district. An additional 101 new industrial organizations were registered last year with an initial capitalization totaling \$11,000,000.

• **Postwar Outlook**—That so much new activity should materialize in the face of almost nonexistent stocks or imports of machinery and equipment may portend fuller expansion after the war. Reopening of trade possibilities abroad and continuation of a moderate government attitude toward both business and agricultural development would help to maintain expansion and create important markets for capital goods.

Industry Comes to Texas

No longer dependent on cattle and cotton, the state has rivaled any other in adapting its facilities and resources to the tempo of war—with vital postwar implications.

When President Roosevelt journeyed into Texas last week to meet President Avila Camacho of Mexico, he beheld an industrial empire where, within easy span of his memory, there had flourished only an economy of cattle and cotton. Bombers soared aloft from fields which once drowned in the pleasant suffocation of bursting cotton. Plains which had recently muffled the melancholy tread of grazing beef were filmed with the dust and the grime of blast furnaces, smelters, carbon black plants.

• **Whose War?**—Nothing could have pleased the Texan more than the President's visit. For Texas is as much a state of mind as a state of the Union and the people get doggonedamnably tired of hearing how the other states are going to win the war. With whose petroleum? they ask. With whose ships? With whose magnesium, tin, steel, foods? With whose fighters?

Texas produces all those things and more, and none of them on a modest scale. In a state whose utmost extremes are as far apart as Philadelphia and St. Louis, whose vast area would encompass all of New England, New York, Pennsylvania, Illinois, and Indiana, and still leave room for New Jersey, superlatives surge through the bloodstream.

• **Chicago Closer**—Texans love to brag about Texas. You can't spend a night in the state without hearing the story about the Chicago sales manager who wired his Texas representative in El

Paso to hustle over to Texarkana and see a hot prospect. "Go yourself," retorted the salesman, "you're closer." He was right. Texarkana is almost 750 mi. from El Paso, not quite 700 mi. from Chicago. And Brownsville, the southernmost point in the state, is more than 800 mi. from the northwestern tip of the Panhandle jutting between Oklahoma and New Mexico.

Although Texans yield to none in national patriotism, they have a special place in their heart for their state. The Lone Star flag still hangs in many a government building and private office. Texas dates all other events, which naturally are antidiomatic, from Mar. 2, 1836, the date of its declaration of independence from Mexico.

• **Little Postwar Concern**—Where industrial Texas is likely to wind up in the postwar shuffle is a roomy subject for speculation, but one with which the population is not too much concerned at the moment. The Texan is still gasping at the transformation that has overtaken his state since the federal government began pouring dollars by the billions into that land of milk and honey not three years ago and private industry met the challenge of war by putting the state's natural resources to work.

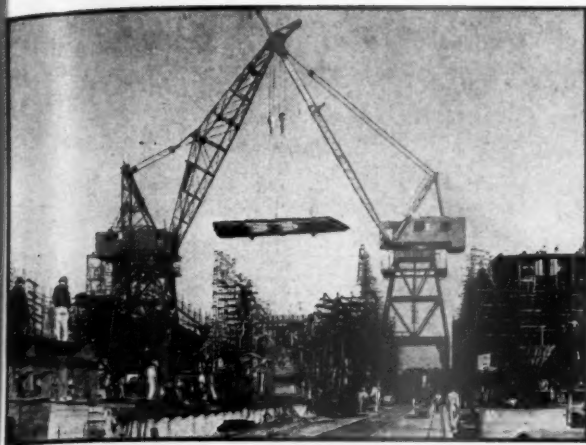
Probably in no other state of the Union has the war stepped up the industrial tempo as it has in Texas. In the first year of the war, employment in all manufacturing industries in the U. S. rose from 13½ million to something over 15½ million, or 15½%. In Texas, the increase was more than twice as great, percentage-wise, from 241,000 to 321,000, or 33.2%. In other non-agricultural industries, the disparity of rise between Texas and the rest of the U. S. was even greater—3.4% for the U. S., 11% for Texas.

• **Twice as Fast**—In all nonagricultural employment, the rate of increase in Texas was double that of the rest of the country, and at the end of 1942 Texas had 1,410,000 of its 6,500,000 citizens so employed. Apart from spotty dislocations occasioned by the rise of new industries, Texas has had a relatively plentiful labor supply. Only in Beaumont was the shortage critical enough to come under the 48-hour week decree of the War Manpower Commission (BW—Feb. 20 '43, p14). There were actual surpluses at such points as Abilene, Austin, Lubbock, San Antonio, and Wichita Falls. But the industrialization process, still in motion, is apparent in



With every sixth Texan now employed in nonagricultural lines, women are taking more and more of the traditionally male jobs. An example is Continental Carbon Co.'s employ-

ment of women to tend burners producing carbon black. Heavily clad for one of the dirtiest of occupations (above), they replace men in the company's Sunray (Tex.) plant.



Symbolic of Texas' war sinews, huge gantry cranes hoist steel plates for vessels at Houston Shipbuilding's ways.



At Fort Worth, Consolidated-Vultee runs dual assembly lines in one of the world's largest plane plants.

WMC's classification of other employment areas in the state.

Dallas originally stood alone as the area likely to go on a 48-hour week within six months. But since that time, WMC has realigned its sights and decided that Houston and Texarkana, too, may be ripe soon for the longer work week (BW—Mar.27'43,p100). This still leaves Amarillo, Corpus Christi, El Paso, Galveston, and Waco in doubtful status. They have adequate labor supply for present needs, but a few months may tell a different story.

• **Four Billions Invested**—Together, private industry and the federal government have invested, since 1940, close to four billion dollars in Texas war production facilities—far and away the greatest record in the South. The government's stake, according to WPB, is around \$1,600,000,000. Into this custom-built arsenal, the procurement agencies have turned a gushing stream of orders aggregating, as of Feb. 28 last, \$4,200,304,000.

There is plenty of evidence about the state that, industrially, Texas is now playing with blue chips. You can't build—or start to build—a billion dollars worth of plants, as Texas did last year, without doing something to the skyline. No longer do oil well derricks monopolize the show, as they had for a quarter of a century, in mute testimony of the state's supremacy in petroleum and natural gas. The derricks are sharing the horizon with superstructures of strange silhouette.

• **Magnesium from Sea Water**—At Freeport on the Gulf Coast Dow Chemical Co. is extracting magnesium from sea water (BW—Sep.21'40,p20). Within a radius of a few miles are vast facilities for production of chlorine, bromine, synthetic rubber, and caustic soda. The total investment is worth close to \$100,000,000.

On the ship channel near Houston, the Houston Shipbuilding Corp., with

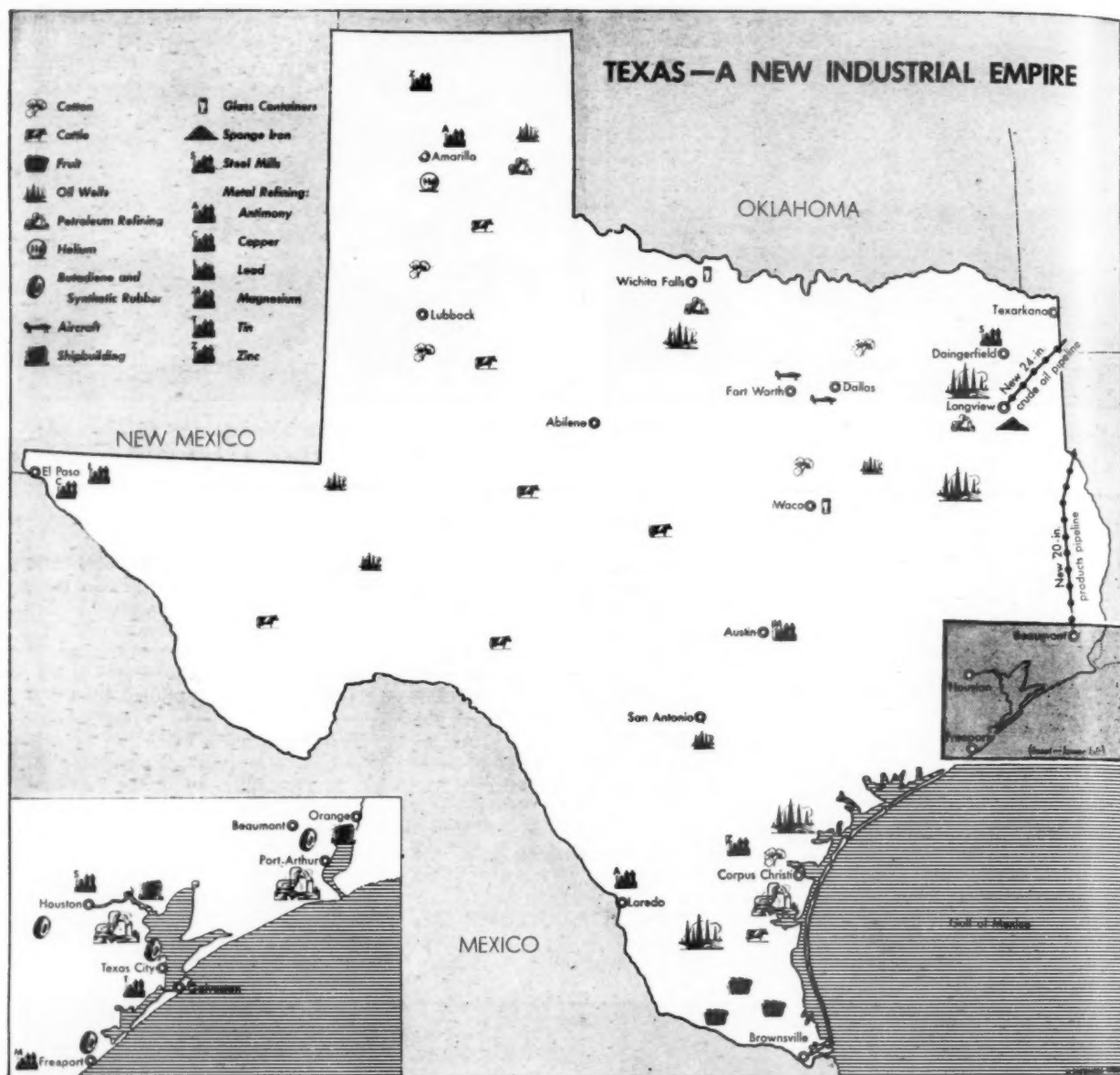
a payroll of well over \$1,200,000 a week and upward of 21,000 employees, is turning out Liberty ships from yards that a scant two years ago were wooded clay hills. Across the bayou, Brown Shipbuilding Co. is building PC subchasers, destroyer-escort ships, and landing vessels. Adjacent to the Brown yard, Texas Shipbuilding Co. is turning out tugs for the Maritime Commission. The Platzer Boat Works, which built yachts for 17 years, now lays the keels for Army tugs and soon will build oil barges. • **Texas Steel**—Houston also has a \$40,000,000 start on a steel industry in the operations of the Sheffield Steel Corp (BW—Feb.6'43,p17), integrated from the coking oven and the blast furnaces to a wide range of finishing facilities

Another blast furnace is under construction for the Lone Star Steel Co. at Daingerfield (BW—Jan.2'43,p52). And Texas, with a pilot plant near Longview, is in the forefront of research in the sponge iron process (BW—Feb.13'43,p58) of reducing ore to metallic iron at a temperature far below the 3,000 F. generated in a conventional blast furnace.

Texas' immersion in aircraft production follows a spectacular pattern. As late as December, 1940, the vast area near Dallas, from which North American Aviation, Inc., sends forth a stream of training ships, fighters, and bombers, was a cotton field. Its parallel assembly lines rival in length those of Ford's Willow Run bomber plant; the employees' parking lot is as large as the space occupied by a fair-size steel mill. Consoli-



Sulphur deposits rate high among Texas' mineral blessings. Freeport Sulphur Co.'s 500,000-ton stockpile at its Hoskins Mound mine suggests its value.



dated-Vultee's assembly line at Fort Worth, grinding out heavy Liberator bombers, is said to be the world's longest.

• **Only Tin Smelter**—At Texas City is the only tin smelter in the Western Hemisphere processing Bolivian ores (BW—Jan.30'43,p19). Owens-Illinois Glass Co. operates a glass-container plant at Waco; Ball Bros. another at Wichita Falls. The U. S. Bureau of Mines produces helium (page 50) at Amarillo and is building a second plant in the Amarillo area.

Carbide & Carbon Chemicals Corp. produces synthetic organic chemicals at Texas City from oil refinery gases piped from the Pan-American Refining Corp. Of the nation's 49 carbon black plants in 1939, 38 were in Texas and produced 80% of the carbon black needed for rubber tires.

• **Important to Rubber**—Producing more than one-third of the nation's petroleum

(BW Report to Executives—Apr.17'43, p51), Texas cuts an important figure in the synthetic rubber program. Shell Oil operates a butadiene plant at Houston. Neches Butadiene Co., owned jointly by Gulf, Pure Oil, Texas, and Magnolia Petroleum, has a plant in the Beaumont-Port Arthur area. Humble Oil & Refining, already making toluol for explosives and high-octane gasoline for aircraft, is expanding to produce both butadiene and Butyl rubber. Sinclair will make butadiene at Houston, and Goodyear Tire & Rubber Co. will copolymerize it into Buna-S rubber with styrene supplied by Monsanto Chemical Co. from a new plant at Texas City.

All these facets of the new industrial Texas take no account of its zinc smelters in the Panhandle, its copper and lead refineries at El Paso, its cotton gin factories, its shell-loading plants, its paper plants near Houston and news-

print plant at Lufkin, its deposits of soapstone, sheelite, peat, celestite, dolomite, magnesite, lignite, and building stone, its bold strides into the labyrinths of food dehydration (BW—Jan.30'43, p65), the fertile soil of its Magic Valley (BW—Apr.3'43,p20). Texas may not be completely self-sufficient, but it is probably closer to it than is any other state in the Union.

• **Flash in the Pan?**—Lest there be any suspicion that this wartime industrialization is a flash in the pan, the results of the Census Bureau's survey of cities stimulated by the war should be borne in mind (BW—Feb.13'43,p19). Of the 28 cities in the U. S. showing the biggest spurts in industrial activity and the best prospects of retaining their new stature, Texas had eight—Corpus Christi, Dallas, San Antonio, Galveston, Austin, Beaumont-Port Arthur, Fort Worth, and Houston.

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A light-colored concrete floor made with Atlas White portland cement reflects more light than a floor made with gray portland cement and very much more than a floor made with still darker materials. Installations in aircraft plants for Boeing, Consolidated, Douglas and North American prove this. Extensive lighting tests show that a white-cement floor, compared with a gray-cement floor in the same plant—

► Provides 20% more light on vertical work surfaces (see illustration);

► Reflects 61% more light to underside work surfaces.

These increases in illumination sharpen vision, reduce accidents, decrease spoilage, increase production.

Concrete floors made with Atlas White portland cement have the same characteristics, including durability, as concrete floors made with gray portland cement. In addition, they are light in color.

Maintenance is simple—frequent sweeping, occasional damp mopping, periodic scrubbing.

Send for new book, "Light from Floors." Write Universal Atlas Cement Company (United States Steel Corporation Subsidiary), Chrysler Building, New York City.

ATLAS WHITE CEMENT

For Light-Reflecting Floors

Tubes Dwindle

WPB urges manufacturers to adjust production to avoid silencing nation's radio sets; general shortage feared.

Washington regards maintenance of the nation's 45,000,000 home radio receiving sets as a wartime must (BW—Dec. 19 '42, p. 38). Hence, officials are perturbed by recurring reports of sets going dead for lack of tubes and other replacements.

• **Shortages Spotty**—Investigation of the facts reveals that while nation-wide reception is not yet seriously impaired, there are spots where jobbers and retailers have run out of tubes, and a serious shortage of this item will develop in two or three months unless manufacturers adjust production.

A line on the condition of consumer sets is available from the Cooperative Analysis of Broadcasting whose business is the checking of consumer radio-listening. Recent C.A.B. surveys show that 91.9% of U. S. homes have one or more sets; of these, 88.1% are in working order. The ratio of sets in good repair is slightly higher than normal. Only one set in 200 lacks tubes. However, there are areas where the tubeless percentage is much higher owing to the failure of local jobbers' stocks.

• **Profit Motive Charged**—The Office of War Information, which wants every family to tune in on war broadcasts, is concerned over reports that a general dearth of tubes may appear in 90 days unless manufacturers act quickly to prevent it. Tube makers argue that they're powerless because of the press of war orders, but it is charged in the trade that tube makers aren't sufficiently interested in turning out needed consumer types because it means interruption of Army-Navy deliveries on which there is a surer profit.

Then there is the recent admonition from Frank H. McIntosh, of the WPB Radio Division. While output of replacement tubes for civilian sets is almost as high as in peacetime (manufacturers sold 2,500,000 replacement tubes in January), McIntosh said there were many complaints, especially from farm listeners, of a tube shortage. He attributed the apparent shortage to the inability of manufacturers to round out their lines and to low production of certain critical types of tubes. As a remedy McIntosh urged makers to exchange tubes among themselves and suggested they concentrate their civilian production on critical tube types, "even though such types may be low profit items."

• **Materials Allotted**—Washington denies responsibility. Radio tube makers

are getting materials through the Production Requirements Plan and the Controlled Materials Plan. (Materials for other radio repair items have not been authorized because the supplies on hand are said to be sufficient for up to a year.)

The proposed Victory line of standardized radio replacements will not include tubes, but there is pressure to cut out unnecessary types. Brand names will remain, and most tubes made from WPB allotments of materials will be labeled "M. R."—maintenance and repair.

• **Psychological Barrier**—Purpose of this marking is to give jobbers some protection from the military services. Army procurement men, and especially those of the Signal Corps, have been watching dealer stocks and grabbing any accumulation of tubes that they are able to find. The M. R. label is expected to provide a psychological barrier against such raids.

Helicopters' Hope

Commuters' old dream of back-yard-to-office hops now seems close to realization as ships are improved.

The idea of aircraft that will rise vertically from a commuter's driveway and come straight down on his office rooftop is far from new; Leonardo da Vinci built a flying model nearly five hundred years ago. Today aviation experts entertain high hopes that the commuter's dream will be realized soon after the war ends.

• **Many Types Tried**—Strengthening these hopes are wartime experience with autogiros, Igor Sikorsky's practical achievements with helicopters, and Northeast Airlines' application to establish a mail pickup-delivery service operating such machines. Fierce competition in the greatly enlarged aviation industry after the war is counted on to spur improvement of rotary-wing ships, be they helicopters, autogiros, gyroplanes, or any one of several other types.

These rotary-wing craft now are at about the stage radio receiving sets were when these had more dials than the listener had hands. Everything seems simplicity itself when an outstanding pilot-engineer like Sikorsky holds a ship a few feet off the ground and carries on a conversation with bystanders; if the average person tried this trick, he would find himself very busy indeed.

• **Engineers on the Job**—All of which means that there is still some work and thought to be given to rotary-wing aircraft design problems. If helicopters had received as much attention as fixed-wing ships, these problems and others would have been solved long ago. All that's

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America is fortunate that, with only 6% of the world's population, it has 37% of the world's total railroad track mileage.

And it is doubly fortunate that, during twenty lean years, the American railroads spent eleven billion dollars of their own money to lay heavier rails, reenforce bridges, improve terminals and build up a transportation system which is the world's greatest assembly line.

For the railroads today are moving more freight than any transportation system in the world has ever handled before.

They provide an assembly line 236,000 miles long - which picks up coal and ore from the mine, food and fibre from the farm, wood from the forest.

They shuttle back and forth,

carrying all these raw stuffs through countless stages of processing, parts-making and assembly, until finished war goods are delivered to the millions of men in our camps, and to ships waiting to carry the precious weapons of victory to armies around the world.

A million and a third tons move a mile every minute on this assembly line, and more than a million loyal and hard-working railroad men keep 'em rolling.

HELP MAKE TRANSPORTATION GO ROUND - Passenger traffic has doubled in the last year. And the railroads want to carry everyone who must travel. So won't you do this to help? **1.** Plan early - make reservations and buy tickets as soon as you can. **2.** Avoid week ends - midweek travel is less crowded, more comfortable. **3.** Travel light - don't carry more baggage than you really need. **4.** Cancel promptly - when your plans shift, release your reservations quickly. Someone else needs them.

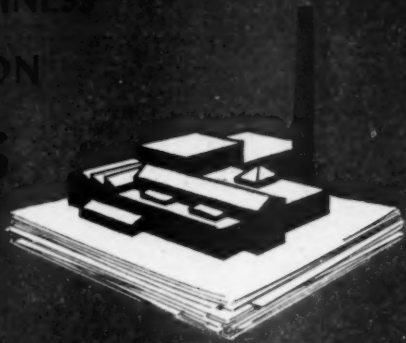
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needed is time and talent, and some of the aviation industry's most creative engineers are now seeking solutions.

These engineers start on the basic theory that all aircraft designs are compromises, and that the vertical lift of rotary-wing ships is gained only by sacrificing other elements of performance, notably maximum speed and ceiling. A basic problem was licked in overcoming the torque that tends to spin the ship as well as its rotor, but there still are factors like the helicopter's sensitive center of gravity that limit its utility.

• **Passenger Problem**—Designers know how to distribute the load around the c.g., but there's still the problem of passengers' getting up and moving about. Years ago a four-passenger ship was built with all the passengers seated around the center of gravity. Several multiplace helicopters are now under development, but observers believe it probable that seat changing will come later in the process of design evolution.

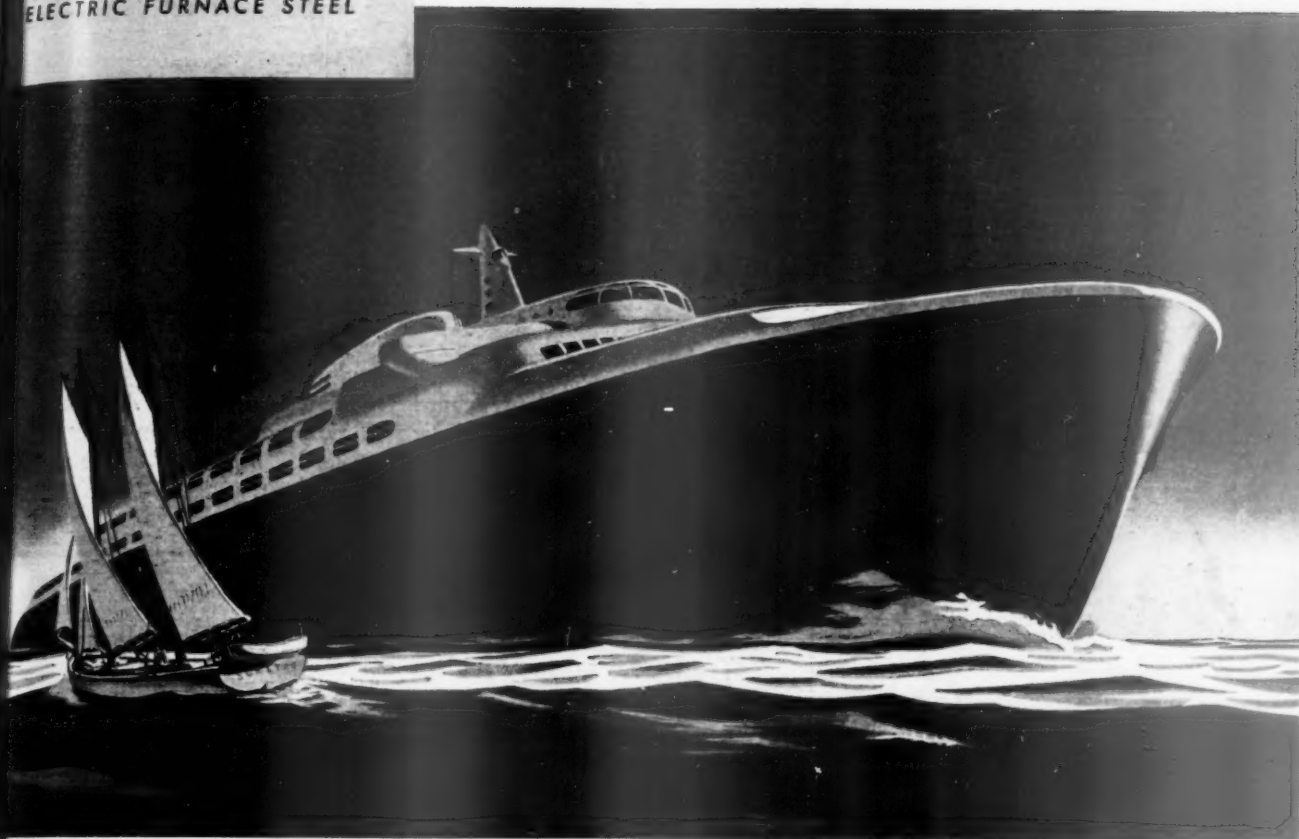
Even though maximum forward speed always will be limited, Sikorsky's experimental VS-300, with a 90-hp. engine and making 15 miles to the gallon, already has made 80 m.p.h.—a speed almost double that ordinarily averaged on the usual automobile trip in which highway and traffic conditions highlight the advantages of straight-line, nonstop air travel.

• **Greater Precision**—Navigation for the novice has been simplified, even before the war, to the point where he had only to select a broadcasting station and keep his ship flying in the right direction by watching a pointer on a dial. Long strides have since been made and, when these new principles are adapted to commercial use, it is agreed that regularity of all types of flying will be increased very nearly to match surface transportation.

Postwar helicopters are expected to be comparable in power, price, and performance to present low-powered light airplanes of the two-passenger type—\$2,000 or maybe a little under. Cost of material and labor probably will slightly exceed that of the light fixed-wing ship at the outset, but the consensus is that volume would minimize the difference. Overhauls would be more expensive than those of a properly maintained motor car but should be less frequent.

• **What the Future Holds**—Adding up all the progress that has been made or that is readily foreseeable, the aircraft industry is convinced that the day is not far away when the tired business man will be able, in an hour, to get from the congested city to the wide-open spaces. Such helicopter hopping is neither new nor impractical; a regular autogiro air-mail service was maintained for a long period between the municipal airport at Camden, N. J., and the roof of the Philadelphia postoffice. Now the talk is even of air taxis and feeder airlines.

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NEW WORLD OF TOMORROW
WILL DEMAND
ELECTRIC FURNACE STEEL



Faster and Finer—Tomorrow

The world is shrinking—rapidly. Out of this war will come a new structure of international relations—with sea commerce a prime factor. American ships will be faster, finer, sturdier than ever before. Marine architects and engineers already have the "know-how" to build them. The fine steels needed will be available—just as soon as they no longer are necessary to achieve the world freedom for which we are fighting.

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As the demands of service increase—as speeds become faster, loads heavier and strains greater—as competition becomes keener—the importance of *safety and economy* demands steels with the uniformity attainable

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It is the precise control obtained in the electric furnace that produces accurate chemical analysis of these steels. This accuracy predetermines physical, heat-treating and fabricating properties. Only in these "targeted" steels that hit the specifications mark time after time can manufacturers be assured of the high levels of exactness essential to the profitable flow of mass production.

Republic—pioneer in this field of steel making—already has increased its electric furnace capacity more than 700%. In the world of tomorrow, these steels will enable designers, engineers and manufacturers to provide better things to work with and to live with—for industry, farm and home. Republic Steel Corporation, General Offices—Cleveland, Ohio. Export Department: Chrysler Building, New York, New York.

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alloy... stainless... "aircraft quality"

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TARGET for Every Day

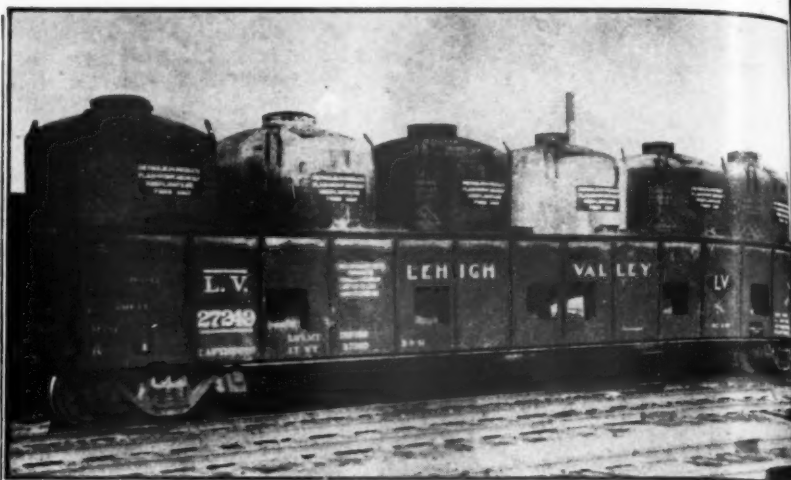
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OIL IN JUGS

Steel containers that formerly hauled dry cement provide the newest wrinkle for backstopping tank car shortages by converting ordinary railroad cars (above) to oil carriers. Leased by

New York's L. C. L. Corp. to railroads, 100 of the 1,770-gal. "jugs" are in service for the Pan American and Mexican petroleum companies. They are loaded five or six to the regular, flat coal car, giving it the 10,000-gal. capacity of the average tank car.

ODT Seeks Cars

Transport agency insists WPB allocate already scarce steel for 30,000 freight cars to avert a breakdown.

Already faced with the necessity of scaling down third quarter requirements for 24,000,000 tons of steel to match a 17,000,000-ton supply, the War Production Board now has to decide whether to cut even deeper in order to release steel for new railroad equipment. It has been warned by the Office of Defense Transportation that a transportation breakdown threatens. ODT is demanding, for the third quarter, construction of 30,000 freight cars, 205 diesel locomotives, and some 2,200,000 tons of rail and track accessories.

• **Additional Pressure**—Pressure on the WPB to give weight to the ODT recommendations is increased by the fact that the Truman committee of the Senate is about to launch an investigation of the railroad equipment situation. This will be part of a general inquiry into transportation, including trucking (BW—Apr. 10 '43, p. 26) and barges. (WPB doesn't always resent such pressure; it sometimes serves to strengthen the board's hand in its dealings with the armed forces.)

The railroads have been getting along so far on an allocation of 20,000 cars and 386 locomotives made last fall by Ferdinand Eberstadt's Requirements Committee. Last February, ODT asked for 1,759,000 tons of steel for track,

cars, and locomotives for the second quarter.

• **New Cars Barred**—The Requirements Committee allowed 350,000 tons of rail, 245,000 tons of track accessories, and 367 locomotives—for a total of 1,240,000 tons. But no cars were allowed.

WPB theory was that enough motive power would make additional cars unnecessary by permitting quicker hauls and more intensive use of existing cars. This is still the theory, so that although ODT is hopeful about its 205 third-quarter locomotives, it's dubious about getting the cars.

• **Output Behind Schedule**—Actually, production is running behind the original 20,000-car authorization, and some 9,500 cars supposed to be built in the first half of 1943 will actually have to be scheduled later. For the trouble, car builders blame the order issued last November by WPB's Transportation and Equipment Division forbidding any one builder to take orders for more than two types of cars. This required extensive reshuffling of orders, and many builders didn't get their orders for steel into the mills until early in February.

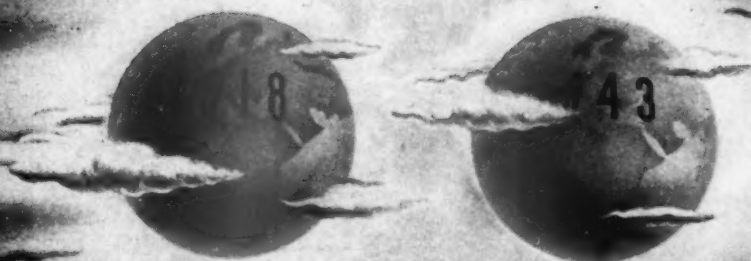
MIXUP IN SOLUBLE GUMS

WPB hopes to smooth out the stickiness among the 20 to 30 old-line importers of water-soluble gums by May 1 by issuing import licenses to cover quotas for the last six months of 1943. Part of the trouble has been caused by refugees trying to horn in on a business that rarely exceeds 7,000 tons a year.

Tragacanth and arabic gums are used mainly in the textile printing trades, by pill makers as a coating, by cosmetics



A Veteran of



Two World Wars!

This Underwood helped make machine guns in 1918 and is doing the same thing today



On the 5th of July, 1918, Underwood Typewriter No. 3-12-238134 went to work for Savage Arms . . . went to work helping to produce machine guns.

Today, that same typewriter has been re-enlisted, and is again in daily use in the same plant doing the same kind of work it did twenty-five years ago. It is a veteran of two world wars.

Also a veteran of two world wars is the name Underwood itself. In 1917 and 1918, many thousands of machines bearing that name served behind the battle lines in France. Many other thousands served on the production front in this country.

Now, in 1942 and 1943, history repeats itself, except that, as a veteran in World



Front page of the New York Times on the day this Underwood began its career at Savage Arms Corporation, Utica, N. Y.

War II, Underwood is giving even greater service. Long before it began, more than five million office-size Underwood Typewriters had been produced and sold, many of which were ready for action when the emergency came.

Behind the battle lines . . . on the production front . . . ashore and afloat . . . the vast army of Underwood Typewriters is a key factor in the all-out Victory effort. Underwood Elliott Fisher Company, One Park Avenue, New York, N. Y.

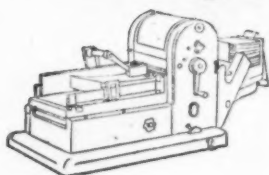
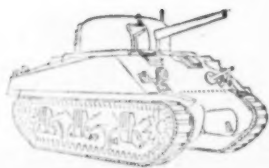
Now in war production of—U. S. Carbines Caliber .30, M1—Airplane Instruments—Gun Parts—Ammunition Components—Fuses—Primers and Miscellaneous Items.

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It's in our tanks to help them stand the gaff and keep rolling. And the same part may make your post-war mimeograph machines more compact in design, smaller and lighter. It's the Torrington Needle Bearing.

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DOES IT HAVE**

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makers as dispersant (so a hand lotion won't have a sediment, for instance) and by candy makers. Karaya gum is used in laxatives.

Until the Allies took over in Iran in 1941, export control of these gums was in the tight, hot, and itching hands of a palace clique commission closely associated since 1936 with the Shah. Tragacanth sells for \$4 a pound and arabic brings 16¢.

Farmers Get Aid

WPB agrees to let down bars on manufacture of new implements next year; quotas expected to be 60% to 85%.

If a more liberal supply of farm machinery is what it takes to make the farmer happy, it's a good bet that rural high jinks will soon begin. Production quotas had at midweek not yet been officially announced, but the machinery and implement manufacturers had a pretty good idea of what they may make for farmers to use next year. The figure is considerably more liberal than they had dared hope until very recently.

• **Farmers Send up a Howl**—Farm equipment companies discreetly made less fuss about 1943's spindling quotas than their feelings warranted, lest industry squawks be discounted as sheer selfish yearning. Once the farmers discovered how scarce machinery was at only 23% of normal output, and how much red tape was required to get a ration certificate, they did plenty of squawking to make up for the companies' restraint.

Also, the farmers wrote to Washington about endless instances of regulatory dumbness. Examples: Implement dealers of one West Texas county swooned when their cultivator quota came through including 16 walking cultivators, a tool that grown farm boys in West Texas had never seen in their lifetimes of riding cultivators drawn by tractors or big-hitch teams. Sixteen disc-type tillage implements for garden push-type tractors were in the stock of Montgomery Ward's Houston store; these garden plows were classed as disc harrows, leaving only three field-size disc harrows to fill the quota to be sold to Harris County's rice farmers who work thousands of acres.

• **Congressmen Understand**—A farmer in Ouachita Parish, La., hard-pressed for labor in planting season, had to keep three hired men pumping water for 100 dairy cattle and 50 beef steers because he could not officially qualify for a pump jack. Every congressman from a dirt-farm district could comprehend these complaints—and did.

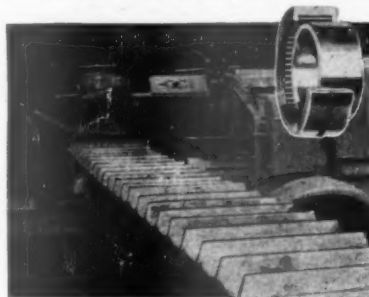
Upshot of the accumulated kicks was a recent session in Washington at

IN THE NEWS

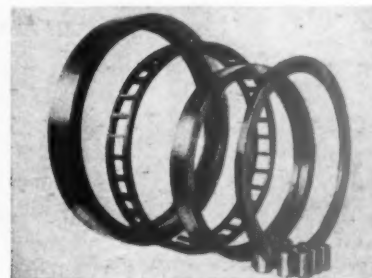
WITH BANTAM BEARINGS



"SEWING" SHEETS OF STEEL together rapidly with sound, dependable welds to speed America's shipbuilding program is the work of The Linde Air Products Company's "Unionmelt" welding machine. Special anti-friction bearings built by Bantam are used on the pressure and straightening rollers which automatically feed the long coil of welding rod from a reel to the work area. These bearings, like those shown above, assure long, trouble-free service and are a typical illustration of Bantam's ability to provide bearings for special applications of all types.



TO KEEP TRACTORS IN FIGHTING TRIM, the rock-battered bolts that hold the tracks on caterpillar treads must be removed frequently to make repairs. Track wrenches built by Rodgers Hydraulic Incorporated perform this tough job. Dependable power transmission is assured by the high load capacity of eight Bantam Quill Bearings in the gear mechanism.



SIMPLER PRODUCT DESIGN AND ASSEMBLY is often achieved by the use of special bearings such as these Bantam Journal Roller Bearings built for crown and traveling blocks on derricks. Bantam's engineering and manufacturing facilities are geared for the prompt delivery of such special bearings for essential purposes.

EXPERIENCED SKILL TO SERVE MANUFACTURERS in the unbiased selection of standard bearings or in the design of bearings for unusual applications is offered by Bantam's engineers. Bantam makes every type of anti-friction bearing—straight roller, tapered roller, needle, and ball. To solve your bearing problems, TURN TO BANTAM.

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ended by representatives of WPB, Dept. of Agriculture, and industry. Already on notice through the President's press conference admission that the restriction and concentration program was a flop, the officials told manufacturers to proceed on the assumption that for 1944 they will be allowed to produce between 60% and 85% as many units as were made in 1940 or 1941, whichever was greater.

• **CMP Makes Provision**—First public indication of this decision is inconspicuously hidden in WPB's recent instructions on how to get materials for manufacturing farm machinery under the Controlled Materials Plan. Embalmed in the dry-as-dust details of the system is a set of tables listing "tentative percentages and base period for the year beginning Oct. 1, 1943, to be used in the preparation of production schedules."

Percentages generally range upward from 50%, average out somewhere above 60%. Manufacturers have been told off-record that these are intended as ultra-safe minimum quotas, that the actual quotas will probably turn out closer to 85%. Final determination awaits announcement of a survey that the D. of A. has just now completed.

• **Most Crops Benefit**—WPB's upward revision of 1943 production quotas on a few urgently needed types of farm equipment, followed by permission to manufacture the entire quotas at once (BW—Apr. 3 '43, p. 34), came in time to permit making tractors and harvesting machinery for use on most crops, though some early crops such as winter wheat cannot possibly profit thereby.

Out of the sides of their mouths, most farm machinery manufacturers say that WPB has from time to time given them on-paper upward revisions of manufacturing quotas, then has failed to make these stick with steel and other needed materials. So they refuse to count these tractors as 1943 output until they are shipped.

• **Promise of Early Start**—What the industry really hopes is that 1944 production quotas will officially jell in time and in form to permit proceeding with manufacture as soon as 1943 quotas are completed. This was unofficially promised for May 1. Order L-170, under which the farm machinery factories are now working, expires Sept. 30, 1943.

Major result of the impending increase in output will be a shift back to something more like the normal distribution of production between the big and little farm equipment companies. Unhappy efforts to concentrate production for 1943 in the smaller plants caused one serious bottleneck: The little factories lack national distribution.

• **System Is Complex**—Practically everybody in the trade, plus the customers, also is fed up on federally supervised distribution of farm machinery based on tagging for particular counties. This



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pattern of distribution developed so slowly that plenty of the allocated machines arrived late and missed the season, especially in the South.

Customers are enraged by rationing restrictions, which not only are complex but also tend to delay deliveries beyond the time when the equipment is needed—unless the customer is more forehanded than many farmers. It is, therefore, a fair guess that machinery manufactured under the new rules will be not only more plentiful but also easier for the farmer to buy. Donald Nelson's last-week pronouncement specifically mentioned simplifying priorities machinery for farmers, promised to put this into effect if at all possible.

Copal Piles Up

Importers want WPB to release stocks of resin and clear warehouses before shipping more from Belgian Congo.

Importers of Belgian Congo copal, whose Atlantic Coast warehouses store the resin, are writing WPB's Protective Coatings and Materials section to permit and encourage industry to buy and distribute the stockpile before more gum is imported. WPB wants additional supplies brought into this country because it soon may be the principal resin available for civilian use in paints, varnishes, lacquers, coated fabrics and papers, and printing inks.

● **How Shortage Has Arisen**—Domestic synthetic resins are depleted by war demands, natural resins are cut off in the Dutch East Indies, and the normal supply of natural resin in our turpentine industry is threatened because of labor shortages.

At present the industries using copal gum are restricted to a two-month supply; importers want to unload a six-month supply on them. WPB hopes to modify its restrictive order (M-56) before the end of May.

Since we export little to the Congo, there are few ships touching that part of Equatorial West Africa, so the gobs of copal have to be moved by coastal vessels to ports farther north where American ships can load it. There are 33 grades of copal, some of it so dirty that private importers think the government will buy a lot of mud unless they are allowed to do the trading.

● **Other Resins Unavailable**—The 1,200 or more paint companies in the U. S. probably have enough paint in retail stores to last more than a year. Replacements might use ester gums except that glycerin is used in their manufacture, and the military takes glycerin; they might use alkyd resins, but raw materials for these are scarce.



Not if we can help it...

NO GREAT WARS have ever been won, no great ideals have ever been achieved, without sacrifice. That is why we accept unavoidable casualties with as much grace as we can muster.

But there is one type of casualty that is *not* necessary; one kind that we *can* avoid. If one single American falls in battle because he does not have enough equipment to fight with... and *enough equipment in time*... we can lay the blame, not on the war, but on ourselves. But this can not happen and will not happen if, in any way humanly possible, we can help it.

That is why the grave responsibility rests with us to guard against slow downs in war production today. There are some slow downs due to

equipment failure that we cannot prevent. Some we can... and one of the most important of these is the slow down due to valve failure.

Guard against valve trouble before it starts... by regular, systematic inspection... by the replacement of worn parts in time to prevent valves from destroying themselves. Select

new valves carefully, install them properly. Instruct new maintenance men thoroughly.

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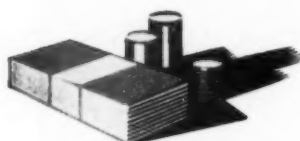
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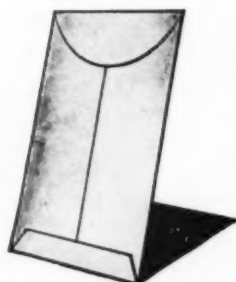
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Whither Whisky?

Merger scramble finds big and medium-sized distillers locking horns in struggle for the postwar market.

Four years ago, Sen. Joseph C. O'Mahoney's Temporary National Economic Committee, investigating monopolistic practices in American industry, trained its guns on the distilling industry. It found that four big companies owned 20 of 97 operating whisky distilleries, held better than 50% of total whisky stocks, produced two-thirds of the whisky made the previous year.

• **Two Domestic Firms**—Two of the four were United States firms—Schenley and National. They had acquired distillery properties and whisky stocks during prohibition days to supply the legitimate medicinal spirits market and had rounded up additional properties—and famous trade names—when repeal was just around the corner.

The other two were Canadian firms—Seagram and Hiram Walker—which also had a backlog of aged whiskies and established brands. Each built a plant in the U. S. quickly after repeal, Seagram at Louisville and Hiram Walker—the largest distillery in the world—at Peoria. In addition, Seagram bought an alcohol plant in Indiana and a modern whisky distillery in Maryland.

• **Take Over 19 More**—Starting the year after repeal with 16 of the nation's 74 distilleries—16 that still represented two-thirds of whisky production—the Big Four had in the five years before TNEC acquired only four companies—after the mad scramble of mergers on the eve of repeal out of which emerged Schenley and National. In the five years since, they have taken over 19 competitors, 10 of them in the past year.

Of the 125 plants now operating, 39 are wholly owned by the Big Four, and 23 are owned by 10 medium-sized companies, 7 of which own more than one plant each. The remaining 63 small distilleries represent less than 10% of national capacity.

• **Growth of the Market**—Before the war, the rapidly expanding market for whisky—and particularly for the aggressively promoted national brands—dictated the absorption of smaller competitors. Total sales of whisky jumped from 50,000,000 gal. in 1934 to 125,000,000 gal. last year.

The industry as a whole looked as though it were off on a disastrous spree of overproduction. Small companies, unable to market their production in competition with the big companies and consequently unable to finance stocks and production, were obliged to sell stocks, production, or both. Many threw

in the distillery itself and the merger movement was on.

• **Schenley Goes Ahead**—First to take advantage of the situation was Schenley which precipitated the TNEC investigation by buying the famous old Bernheim and Belmont distilleries in Louisville together with some 5,000,000 to 6,000,000 gal. of aging whisky. Unperturbed by the monopoly committee or doubts in the trade that mortgaging the company to the hilt for additional whisky stocks was wise, Schenley proceeded after the TNEC investigation to acquire Oldtyme properties—two more distilleries and another 5,000,000 to 6,000,000 gal. of whisky.

Since then, Schenley has bought up four other companies, two in the last six months, and is now in the enviable position of having more whisky than anybody else—an estimated 100,000,000 gal., better than 20% of total stocks.

• **National's Countermoves**—Schenley hoped to offset National's well-established and very profitable bottled-in-bond brands by rounding up as much four year old whisky as possible back in 1937-39 when bonded whisky came on the market in volume; but National promptly countered by buying four old Kentucky distilleries and trading off—to Hiram Walker—its distillery in Peoria where it had produced blended whiskies. (This is the only direct deal to date between members of the Big Four.)

Last month, after a pause of two

FOUR YEARS OF WHISKY ACQUISITIONS

Company	Estimated Stocks (000 omitted)
By SEAGRAM	
McKenna, Fairfield, Ky.....	1,250
Hunter, Owings Mills, Md.....	4,000
Dant & Dant, Louisville, Ky....	None
Blair, St. Francis, Ky.....	1,750
Old Colonel, Midway, Ky.....	750
Old Lewis Hunter, Cynthiana, Ky.	3,000
Bedford, Bedford, Ohio.....	500
	11,250
By SCHENLEY	
Monticello (Oldtyme), Cedarhurst, Md.....	3,000
Oldtyme, Limestone Springs, Ky.....	3,000
Wathen, Lebanon, Ky.....	3,750
Buffalo Springs, Stamping Ground, Ky.....	1,000
Pan American, Tovrea, Ariz....	350
Blue Ribbon, Carrollton, Ky....	350
	11,450
By NATIONAL DISTILLERS	
K. Taylor, Frankfort, Ky.....	5,000
Dant & Head, Gethsemane, Ky....	2,500
Bardstown, Bardstown, Ky....	3,000
Old Joe, Lawrenceburg, Ky.....	2,000
Glencoe, Louisville, Ky.....	3,000
	15,000
By HIRAM WALKER	
Penn-Maryland (National), Peoria, Ill.	None
Wight, Baltimore, Md.....	2,000
	2,000

The Big Four's Share of the Whisky Industry

(In millions of gallons—000 omitted)

(Proof Gallons)	No. of Distilleries	Annual Capacity	Stocks End of 1942			Total 1942 Sales
			Whisky	Spirits	Total	
Seagram	10	75,000	30,000	15,000	45,000	26,000
Schenley	13	75,000	90,000	10,000	100,000	20,000
National	13	50,000	70,000	5,000	75,000	13,000
Hiram Walker	3	40,000	35,000	5,000	40,000	10,000
Total, Big Four....	39	240,000	225,000	35,000	260,000	69,000
75 other companies...	86	260,000	246,000	10,000	246,000	46,000
Total, industry.....	125	500,000	471,000*	45,000	506,000	115,000*

* To the rapid calculator, this makes a 4-year supply of whisky, but the figures don't take into account a 20% loss in storage which reduces the apparent reserve to a 3-year

actual supply. In addition, the reserve is further reduced to the extent that whisky sales are being pushed up by the rapid diminution of the supplies of gin.

years, National resumed buying, taking over the Glencoe distillery in Louisville and an estimated 3,000,000 gal. of whisky. Hiram Walker, besides acquiring National's plant at Peoria, bought the Wight distillery in Baltimore, an old and respected whisky name and a sizable inventory.

• **Seagram Joins Race**—Last of the Big Four to get in the merger movement was Seagram's, which was very nearly caught short. Specializing in blended whiskies which are two-thirds neutral spirits (alcohol) and only one-third whisky, Seagram had no need for substantial stocks, since neutral spirits are customarily not aged. However, foreseeing possible wartime restrictions on production, Seagram laid away more than a year's supply of blending spirits before the war and bought one small distillery in Kentucky to add to its three big plants.

When the WPB took over the whisky industry's full output of alcohol last year, Seagram pitched in and turned out more than any other company but complained bitterly of the competitive squeeze. Unable to add to its vital spirits stocks, by either production or purchase, Seagram quietly and quickly acquired six distilleries, planning to convert some of its whisky holdings to neutral spirits with equipment not useful for alcohol production.

• **Importance of Stocks**—Seagram's case highlights the current trend toward consolidation in the whisky business. The WPB's continued prohibition of whisky production has put a premium on stocks. Those who have them may be able to hold out for the duration; those who haven't are through.

That's why a strict rationing of sales is welcomed by the companies that do have reserves—with some exceptions, like Publicker, which are pushing their brands vigorously in the hope that they may be solidly established when the war ends and that the war will end before their stocks run out. That's why the little fellow is inclined to get out now when he can sell off his stocks and property profitably instead of waiting until

after the war when the big fellows may not ease him out so gently.

• **Hope for a Holiday**—Only hope the little fellows have is that the WPB will relent and allow some whisky production. Despite repeated statements by the WPB that there will be no vacation for whisky making, the average distiller suspects that the alcohol shortage may not be as serious as it is painted, knows it can't be as serious as the whisky shortage. Announcement of a stockpile far in excess of 100,000,000 gal. buoys him up.

Regardless of whether they give up now or later, the small distillers are probably licked. With a product in no way superior to that of the big producers—who are also producing in many small plants with old Kentucky distillers in charge—and lacking the kind of vigorous promotion behind the national brands, the small distilleries would probably be forced out after the war. With the big distillers having enough productive capacity to meet their needs, the convenient prewar arrangement under which the small distillers largely produced for the big ones would be out.

• **The Real Competition**—The competitive struggle after the war will undoubtedly be between the Big Four and the medium-sized companies which are actively expanding now, competing—often successfully—with the bigger concerns for the prizes.

Baltimore Pure Rye bid against Seagram at least once last year and won, taking over the Churchill distillery in Kentucky which Seagram wanted badly. American pulled off the biggest single deal last year, buying out the Ben-Burk company, its well-merchandised "Old Mr. Boston" brands, and some 10,000,000 gal. of whisky.

• **American Scores Again**—Last week, American scored again, buying the old T. W. Samuels distillery in Kentucky with more than 6,500,000 gal. of whisky. Together with Publicker, Baltimore Pure Rye, Frankfort, Century, Park & Tilford, Fleischmann, Glenmore, and Brown-Forman—the strong middle-sized companies—American and Merchants will give the Big Four a real race.

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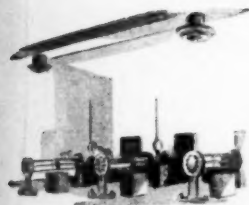
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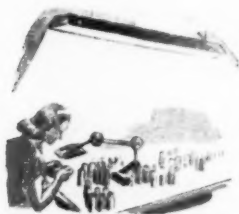
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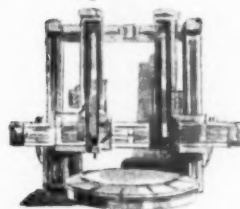
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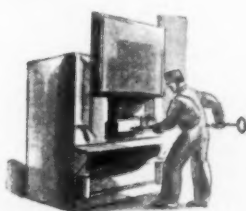
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CHOW FOR AN ARMY

Rationing has caught up with the Army—not because of too little food but too much. Called up to answer Truman committee accusations that 21% of Army food ends up in garbage cans, Quartermaster General E. B. Gregory (right) told Sen. James M. Mead, New York (left), that a two-year-old survey had shown this. But in his explanation of corrective measures, he let out of the bag some interesting Army food figures. Soldiers' daily rations have been lopped from 6 lb. to 5½ lb. to halt mess hall waste, but nevertheless the Army on any given day during 1943 must have on hand 5,103,000,000 lb. of food. This is to create a 90-day reserve stockpile for 4,500,000 men (average for 1943) in the U. S., and a 270-day reserve for an average of 2,100,000 overseas. This means a domestic stockpile of 2,126,250,000 lb. and a foreign one of 2,976,570,000 lb. Statisticians, using figures



revealed at the hearing, compute the Army's 1943 food consumption at 12,647,000,000 lb., estimate it will increase to 15,713,000,000 lb. by the year's end if the Army's strength goes to 8,200,000 men as reported. And with about 2,700,000 soldiers abroad, the reserve stockpiles will jump to around 6,426,000,000 lb. By the end of 1944, if the Army remains the same size, the consumption rate will remain static, but with an estimated 4,700,000 men shipped overseas, stockpile totals should go to 8,316,000,000 lb.

Wool Guarantee

**Government's plan to buy
1943 clip assures growers of
a pegged market; it may not be
so nice for dealers.**

Government purchase of the "entire" 1943 wool clip, or what is left of it by midnight Apr. 24, means headaches for dealers and manufacturers, insures wool growers against a postwar price collapse.

• **Worried About Stockpile**—The take-over comes in response to months of agitation by producers for the government to buy up all wool from 1943 until two years after the war. By this means, they figure that they will be protected against any sudden sale of the immense stockpile that has been accumulated.

First result of the purchase order was a scramble by dealers to buy wool, and they are believed to have snatched as much as 90,000,000 lb. from the estimated 390,000,000 lb. clip. They figured they could save perhaps 1½¢ a lb. by jumping in. (Commodity Credit Corp. is buying the crop at the OPA ceiling less charges, will resell at the ceiling plus charges for grading and certain other services.)

• **No Rule Against It**—The Dept. of Agriculture purchase order didn't say specifically that all wool had to be sold to Commodity Credit Corp., so the

dealers felt they could buy with impunity. Agriculture now calls the open-market buying an evasion but doesn't sound very mad about it.

The case of wool is very different from most of those commodities whose supplies are being administered by the government; the situation is quite comfortable. Washington doesn't believe the Japanese can take Australia and cut off imports from down under. Sinkings in the Pacific have been negligible. Wool cloth production last year broke all records at 525,000,000 linear yards and, even though the services took about half of output, there still was a nice balance for civilians.

• **More for Civilians**—From now on, there will be as much wool cloth as people need but not as much as they want. A helpful factor is that the Army, which plunged on serges, meltons, and other military cloth earlier in the war, now has decreased its takings moderately. This had something to do with the release of an additional 75,000,000 lb. to the civilian supply.

Right now, says WPB, distributors are carrying adequate stocks of men's clothes. There is a shortage of fine wool suits for women, but still plenty of staple goods. Off the record, WPB officials are almost willing to guarantee plentiful wool products through next winter, their one reservation being unpredictable Board of Economic Warfare and lend-lease requirements.

• **Woolens Now Are Mixtures**—Of course, there's a catch in what WPB

WHAT'S MY DIESEL GOT TO DO WITH A

GOLF BALL?



Now don't get us wrong, Sergeant Henderson. We know you're fighting muck and fatigue and Jerries and Japs for something bigger than the privilege of playing golf. *But it's freedom to work where you want, and play when you want, that the golf ball stands for.*

And that diesel unit that provides your transmitter's juice is built to fight side-by-side with you. With the same American ruggedness you have. The same brute strength to keep going, in spite of hell and high water. *But its plans for the future are different from yours.*

When the time comes for you to ease up, and enjoy life with all that a free world can give you, our engines are going to work harder than ever. Shouldering loads. Spreading electric lighting and transportation. Working long engine-weeks, so there may be shorter man-weeks.

Take our word for our part of it, Sergeant—that drop of magic called diesel engine fuel oil is going to help make the world of tomorrow a world worth fighting for. Rogers Diesel and Aircraft Corporation, 1120 Leggett Avenue, New York, N.Y. Divisions: Hill Diesel Engine Company, The Edwards Company, Edwards Aircraft Products, Inc., Ideal Power Lawn Mower Co.

ROGERS

DIESEL AND AIRCRAFT CORPORATION

Diesel Engines, 5 to 2000 h.p. • Gasoline Engines • Generator Sets • Generators • Power Units • Switchboards • Pumping Units • Hydraulic Aircraft Equipment • Recoil Mechanisms • Power Mowers • Power Brushes • Snow Removal Equipment • Streamlined deluxe Railway Motor Trains • Diesel Locomotives



TRADE MARK REG.

THIS IS WHAT HAPPENS WHEN SWEATING ROBS THE BODY OF SALT



When men sweat, one of the most essential body minerals — salt — is dissipated. Vitality is sapped. Lassitude sets in. Heat-Fag follows and even cramps or prostration result if salt lost through sweating is not replaced.

Beware of Heat-Fag. It is a dangerous, insidious force that brings on fatigue — renders men inalert—slows down reactions. Often it is the direct cause of industrial accidents. As salt is sweated

out, the worker tires, becomes careless — a slight miscalculation — and another costly accident is chalked up. Heat-Fag has again taken its toll.

Production-minded men know that Salt Tablets are a "must" for workers who sweat and do hot work. That's why they are always available in leading industrial plants... why they are recognized as the simple, easy and sanitary way to replace the body salt sweated out.

MORTON'S
Heat-Fag
SALT TABLETS



QUICK DISSOLVING (Less than 30 seconds)

This is how a Morton Salt Tablet looks when magnified. See how soft and porous it is inside. When swallowed with a drink of water, it dissolves in less than 30 seconds

Case of 9000, 10-grain Salt Tablets, **\$2.60**
Salt-Dextrose Tablets case of 3000, **\$3.15**

Place MORTON'S DISPENSERS at all Drinking Fountains.

They deliver salt tablets, one at a time, quickly, cleanly — no waste. Sanitary, easily filled, durable.

500 Tablet size - **\$3.25**
1000 Tablet size - **\$4.00**



Order from your distributor or directly from this advertisement... Write for free folder.

MORTON SALT COMPANY • CHICAGO, ILLINOIS

means when it says wool. You don't find out, as you read the first page of the report on 1942, but on the second page, at the top of a production table, you see that anything containing 25% or more of wool by weight is called wool. Such a mixture is not usually desirable to the carriage trade, but it gives adequate warmth.

Cotton cloth, produced by an industry 22 times as big as the wool goods industry, will be relatively harder to come by as the war goes on. Army and Navy demand for cotton clothing and equipage seems insatiable. The Army is buying shrimp net to ease its newest textile bottleneck, which is fish net to make flat-top and drape camouflage. Because of marauding airplanes, almost all trucks, guns, camps, supply dumps, planes and even buildings and parking areas have to be shielded from view with cotton or hemp textiles.

• **The Labor Problem**—Production of cotton cloth at the rate of eleven billion yards is not enough for all purposes and the industry can do very little more; its low-paid workers leave for war plants; it is getting no new machinery, and even a good supply of repair parts cannot save the old equipment indefinitely. Cotton is plentiful, but not plant and workers.

Things to Come

Dealers will flock to June furniture show to glimpse what they may get to sell, but only "hardest pressed" are invited.

Publicity theme for the summer show, scheduled for June at Chicago's Furniture Mart, is that only dealers "whose very existence is at stake" should attend. Even on that dubious invitation, many a retailer can honestly come running.

• **Looking for New Items**—Stores with annual sales of \$125,000 or less handle 60% of the country's furniture business. These small outfits lean heavily on markets, particularly now that salesmen's calls have dropped 80% since last year. Dealers know that new and strange merchandise may have to be substituted for old favorites this year, want to see now the pieces they may buy later from photographs.

Manufacturers are understandably indifferent to a summer market. They already are beginning to hang up showroom signs: "Sorry, no more orders for 1943!" Their January and February orders were up 43% over a year ago, yet they figure shortages of labor and materials will permit them to deliver no more than 60% of last year's production.

• **Sales That Spell Trouble**—Dealers are selling 5% to 10% more (in dollars) but

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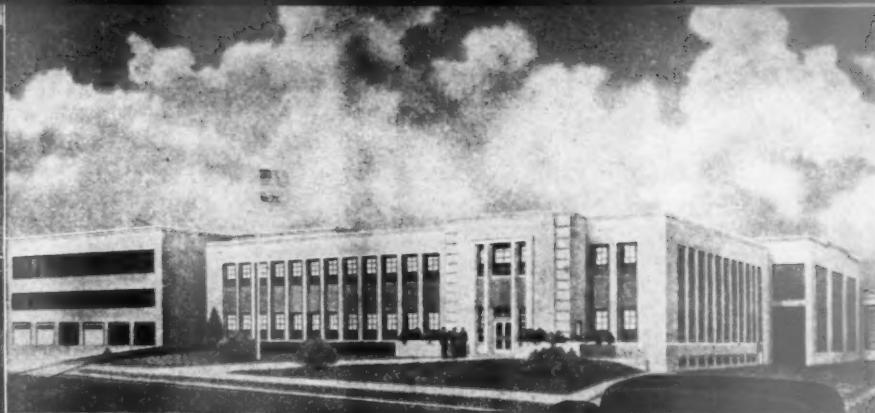
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Vital NEW MACHINE TOOL PLANTS

PROTECTED BY Carey BUILT-UP ROOFS

At many of the nation's great machine tool plants, as on every other industrial front, CAREY Built-Up Roofs are rendering outstanding service by protecting buildings and equipment vital to the war program—worthy testimony to the **DEPENDABILITY** of these famous engineered roofs.

CAREY Roofs are individually designed to withstand temperature extremes, salt air, chemical fumes, and other conditions that adversely affect roof life. Normally, these time-tested roofs far outlive their bonded period of service. Make sure of maximum roof **VALUE** at minimum cost—specify **CAREY**. A nationwide organization of experienced roofing contractors is at your call. For details, address Dept. 29.

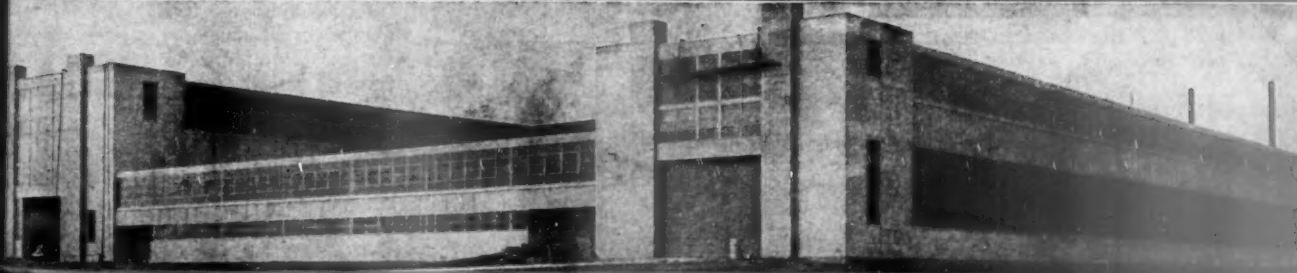
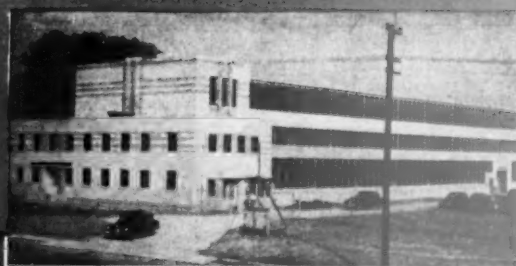
MACHINE TOOLS SET STAGE FOR VICTORY

Upon the machine tool industry was imposed the first tremendous job of equipping the nation for war. The way the industry responded — increasing production from 25,000 machines a year to 350,000—is a shining example of Democracy in action. Thanks to the vital ground work of this basic industry, America has accomplished more in two years than German dictatorship could accomplish in also.

THE PHILIP CAREY MFG. COMPANY

Dependable Products Since 1873
Lackland, CINCINNATI, OHIO

In Canada: The Philip Carey Company, Ltd.
Office and Factory: Lonsdaleville, P. Q.



Precious Red Metal of '75 ... and '43

Today, as in Colonial times, every available pound of copper and brass scrap is being sought to speed production of war materials requiring these metals.

Boston Scrap Drive

Sarah Winthrop awoke with a start that fateful night of June 16, 1775. Her husband stood by her bed, his gentle face grim. He held Cousin John Adams' wedding gift, her prized brass candelabra. Outside, feet tramped through the dark street. Colonel Prescott's men, he explained. It was war,



A candelabra for cannon.

a struggle for freedom that would be fought with the cannon her brass candelabra would help to make.

Again in 1943, there is an insatiable demand for copper and brass to make the machines and munitions of war. For the duration, home owners must forego copper tubes for rustproof water lines, brass hardware and bronze screening to remodel their homes; they must think about giving their copper ashtrays, their brass bedsteads for the scrap heap ... and their copper pennies as well as dollars for war bonds.



Lipstick to Powder

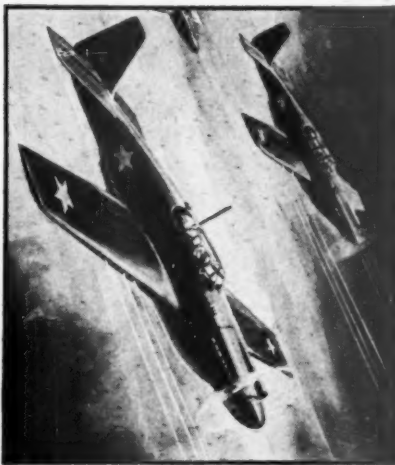
For the duration, women must be satisfied with lipstick containers made from materials other than brass. The reason is that brass is more useful right now as a "powder" container ... one lipstick equals one brass cartridge case.

Copper's Cradle

The cradle of America's giant copper and brass fabricating industry is located in the peaceful Naugatuck Valley of Connecticut, but the industry has spread throughout the East and Middle West. Since the birth of American liberty, copper and brass have streamed from ever-expanding plants, bringing comfort and economy into American homes. Most important of these fabricators is The American Brass Company, operating thirteen U. S. and Canadian plants.

Where 1943 Copper Goes

Fifty fighting planes in one minute of sustained combat firing will use seven tons of copper. Every month, the Army Signal Corps requires more copper than all telephone, telegraph and radio receiving set manufacturers used in 1939. The American Brass Company produces a large proportion of this metal under the famous Anaconda trade-mark.



Copper makes their sting potent.

Allocations

In the copper and brass industry, as in the steel and automobile industries, the peculiar capabilities of individual companies are being used to best advantage. For example, The American Brass Company, because of its more than a billion pounds per year capacity, has been selected by the War Production Board as one of the copper and brass manufacturers to specialize in the production of large tonnage items.

lots more actual furniture because electrical appliances are missing. When both war-plant workers and prosperous farmers are bidding, furniture dealers are rapidly selling themselves out of business—or at least out of top-quality merchandise.

Furniture men got little merchandising at the Stevens Hotel auction last month (BW—Feb. 27 '43, p. 70). Hotels and tourist court owners, unaffected by resale price ceilings, outbid them, paid the ceiling of \$6.60 for new carpeting but bid the same carpeting, used, up to \$8. **• Worst Has Not Happened**—Assorted Jeremiahs, including the U. S. Dept. of Commerce, predicted that merchandise shortage would kill off many furniture stores last year. The debacle failed to materialize. Most dealers have inventories good for two to five months and high hopes of getting deliveries equal to 50% to 75% of their 1941 sales. Some who have kept going literally "did it with mirrors" and chinaware plus other noncritical goods.

WPB's recent order L-260, reducing each manufacturer's furniture patterns to 35% of those made in September, 1941 (BW—Mar. 6 '43, p. 54), hits dealers in the short ribs. They must now hunt reluctant new sources.

• Many Styles Killed—Most manufacturers welcome the opportunity to slaughter slow-moving patterns. Some factories had already cut below L-260's limits to save labor and materials. By the American Walnut Manufacturers' Assn.'s latest survey, U. S. furniture factories made 1,961 styles of bedroom and dining room suites in January, 1941, only 1,045 in January, 1943. L-260 is rough on quality lines because each wood species used counts as a pattern but stain varieties don't count.

Order L-260 also prohibits such "non-essential" hardware as locks and drawer pulls, cuts "essential" hardware by 50% dollar value. Manufacturers, used to less expensive screw construction, now have to fall back on old-style dowels or mortise-and-tenon design.

• Most Serious Shortages—Furniture makers are actually worried about getting enough lumber to use up their allotments of essential hardware. All kinds of wood are scarce. Other serious shortages: (1) upholstery covers, due to whopping government demand for cotton yarns; (2) glues—resin, phenolic, and casein glues reflect wartime shortages, while black market slaughtering reduces volume of hides and hoofs available for animal glues; and (3) finishing materials—the industry is fatalistically using up its supplies of quick-drying varnish, lacquer, and shellac, dreads slower-drying substitutes. Behind all this is the familiar manpower headache: Furniture manufacturers reported a 62% average labor turnover last year.

Between 40% and 60% of U. S. furniture manufacturers are doing some

Published in the interest of a better informed war effort by

THE AMERICAN BRASS COMPANY

General Offices: Waterbury, Connecticut

Subsidiary of Anaconda Copper Mining Company



war work, but only about 25% of the industry's capacity is involved. Many a war contract proved unprofitable, and few new contracts are forthcoming. Smaller War Plants Corp.'s much-publicized recent contract for \$10,000,000 worth of National Housing Agency furniture to be made by "distressed" plants (BW-Apr.10'43,p17) stirs some manufacturers to inquire, "That's fine, but what would we do next week?" Few furniture makers consider themselves distressed but admit they may be in that category late this year.

How Much for Oil?

OPA turns thumbs down on price rise, citing President's hold-the-line order, but Ickes asks boost of 25¢ a barrel.

Oil men's hopes for an early increase in the price of crude got a big boost last week when Rep. Wright Patman's small business committee told OPA it expects prompt action.

• **Pike Told to Look Again**—But both Price Administrator Prentiss M. Brown and his oil price adviser, Sumner T. Pike (on leave from the Securities and Exchange Commission), made it plain that the President's "hold-the-line" executive order forbids any price rises except those necessary to increase the production of materials needed for war—and that they don't think the oil industry has made out any such case for itself. Pike was bluntly accused of prejudging the issue and having a closed mind, and the committee made him promise to reexamine the figures and reach an early decision. The implication was that if OPA doesn't raise the price soon Congress may do something or other.

Petroleum Administrator for War Harold L. Ickes had asked OPA for increased crude prices, averaging 35¢ a barrel, and equivalent increases in products prices which would work out to less than 1¢ a gallon on gasoline and fuel oil. This was pried out by the committee in spite of elaborate efforts to keep it secret.

• **Ickes Warns of Shortage**—Ickes argued that an immediate increase in crude prices is necessary to maintain production at levels required by the war by preventing premature abandonment of high-cost wells, by making it profitable to drill marginal properties and use secondary recovery methods, and particularly by stimulating exploration for new fields. He painted an alarming picture, buttressed with statistics, of a real oil shortage within a year or two unless there are new important discoveries soon and declared a price increase the best remedy.

Pike was also forced to disclose a

...an Invasion Port (Official U. S. ...
...are hustling war material at home

This Free-Roving
Tractor-Footed
**ROUSTABOUT
CRANE**

Smashes your Load-Handling Bottlenecks

Where you want it when you want it, this speedy loadster hustles bulky odd-shaped stuff in and out, up and over—gives you instant load-handling action that prevents costly delays, saves manpower. In hundreds of depots, airports, docks and defense plants, the ever-ready Roustabout Crane moves, stacks, loads anything to 5 tons—without a whimper. Powerfully built for years of overwork—boom rides a heavy-duty ballbearing turntable, enclosed gears run efficiently in oil. Wheel or crawler mounted, easy and inexpensive to operate. For fast action now, for cost-saving later, write for bulletin showing Roustabouts at work.



THE HUGHES-KEENAN COMPANY
600 Newman Street, Mansfield, Ohio

ROUSTABOUT CRANES
By Hughes-Keenan

Behind OUR VICTORIES...



...is SUPERIOR TRAINING

Victories in the Air originate on our home front—on the Army training fields where our Pilots receive the thorough schooling that prepares them for combat.

The Bomber Pilot in training must have absolute confidence in his equipment, in order to attain the concentration on accuracy required in modern precision bombing. Complete engine reliability is of utmost importance in gaining that assurance.

Jacobs Engines power more twin-engine Training Planes than all other engines combined—because they give the Bomber student that freedom to concentrate.

These efficient, reliable engines will give the same feeling of assurance to Commercial Pilots and to the Business Man and the Sportsman flying their own planes, after Victory is achieved.

JACOBS AIRCRAFT
Engines
POTTSTOWN • PENNSYLVANIA • U.S.A.

memo he had written Brown immediately on receipt of Ickes' recommendation. In this Pike said this was a bad time to consider any price increase and questioned Ickes' facts and reasoning, saying "somebody has evidently taken the secretary for a statistical ride in presenting the figures." The only thing that Pike, Ickes, and the industry agree on is that a price increase would be better than a government subsidy or bonus to stimulate exploration and wildcatting.

• **What Industry Thinks**—The industry had modestly asked for an increase of only 25¢ a barrel in its formal request, but a score or more of independent producers told the Patman committee that a rise of at least 50¢ a barrel is needed to cover recent advances in drilling and exploration costs. On the basis of the Bureau of Labor Statistics commodity price index, they figure crude is now 58¢ below "parity" with other wholesale prices.

The chief obstacle to an oil price increase, of course, is political. With the Administration battling John L. Lewis on coal miners' wages and the farm bloc on agricultural commodity prices, an increase in oil prices would look inconsistent with "holding the line," and it would be difficult to explain to the public. So Economic Stabilization Director James F. Byrnes can be expected to delay action as long as possible.

• **Oil Men Are Hopeful**—But the industry's hopes are so buoyed that producers having unfilled storage facilities are rumored to be withholding sales.

Dogs on the Spot

Leather shortage turns attention to the hide of man's best friend; salvaging of hog skins also studied.

Mrs. W. C. Richards, of Athens, Tex., remembers that when a child she had a pair of dog-skin shoes. And, of course, she's heard about the shortage of leather. So she wrote to Harry Hopkins last month suggesting the salvaging of dogskins.

• **Plan Under Consideration**—George J. Laemmle, leather consultant of the WPB Conservation Division replied that her suggestion is "very practical," and that the matter was under discussion with other government agencies. That's where it rests.

The country's dog population is around 25,000,000. An average life span of five years would produce about 5,000,000 skins a year, but collecting them is the hitch. The suggestion is advanced unofficially that the mayor of some fairly large city could prominently identify himself with the war effort by arranging with a tannery, the city pound, and

local veterinarians for skinning the dogs that are put to death.

● **Enough for Test**—Such an arrangement would produce a sufficient number of skins to test the practicability of this means of collection, and the mayor's patriotic experiment might give impetus to a national program.

There is no doubt about the feasibility of tanning the skins, according to experts who say that they make excellent glove leather. Russia has relied extensively on dog and cat skins for domestic use so as to permit export of her fine furs.

● **Hog Skins Studied**—Another proposal for augmenting leather supplies which hasn't got anywhere to date is the salvaging of hog skins by the packing houses. The hide now is ruined by scalding. Slaughter of hogs runs to about 80,000,000 head a year, and experts say that a hog skin would yield a minimum of 10 sq. ft. of plump leather, some heavy enough for sole leather.

In the present scarce leather market the raw skins would be worth \$2 each, a total of \$160,000,000 in hides—and double that in terms of leather. Hog leather requirements are normally supplied by imports. In Europe, and especially in Russia, the skins are worked into useful leather of a high standard.

● **Deer-Skin Gloves**—A tidy amount of badly needed military glove leather was obtained this winter by enjoining hunters to recover deer skins. It is estimated that this drive brought in at least 100,000 skins.



SALAD KING

From his Martinsburg (W. Va.) farm, C. E. Dennis (above) rules as undisputed king of the water cress market. His most recent achievement is "selling" the Quartermaster General on putting cress on Army salad menus. Dennis cultivates 97 acres of the greens in West Virginia, Alabama, and Pennsylvania, while keeping a sharp eye on quality and even lending a hand with the packing.



"TASK ACCOMPLISHED. 18 PRESENT... 12 MISSING, SIR!"

Twelve have not returned. From the dog-tired, sweat-soaked men who answer rollcall, we know that their patrol went through hours of blazing hell... that not a single man shirked his duty... that a threatening Axis outpost was wiped out, its nest of death-spitting guns now a harmless heap of twisted metal.

These twelve have paid for our freedom. Fallen in action or peering through barbed-wire, they have proved their belief in liberty. They have a right to be absent, the best right that brave men can have.

No enemy guns, no enemy barriers stand between us and our place of work. What right has any of us to fail to report for duty?

If we, or those we know, are missing from our war jobs, the hopes of millions will be deferred. By example and by guidance, we can help end absenteeism. Nothing less than our utmost effort can keep faith with these twelve... and with thousands upon thousands like them.

This advertisement is one of a series dedicated by The Watson-Stillman Company to earlier victory through greater effort.

It is the privilege of Watson-Stillman to devote a great proportion of its production to war needs. Into arsenals, shipyards and other plants serving our fighters, pours an ever-increasing volume of W-S hydraulic presses, pumps, jacks, valves and forged steel fittings.

The Watson-Stillman Company, Roselle, N. J., Engineers and Manufacturers of Hydraulic Presses, Pumps, Wire Rope Shears, Jacks, Forged Steel Fittings and Valves.

WATSON-STILLMAN

*Hydraulic Equipment, Valves,
Forged Steel Fittings*

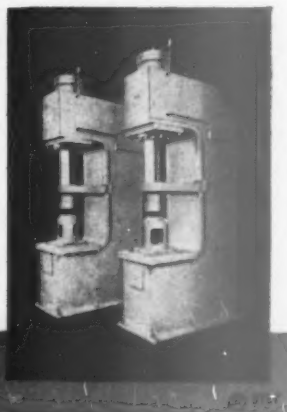
THEIR TASK IS SHELL LOADING

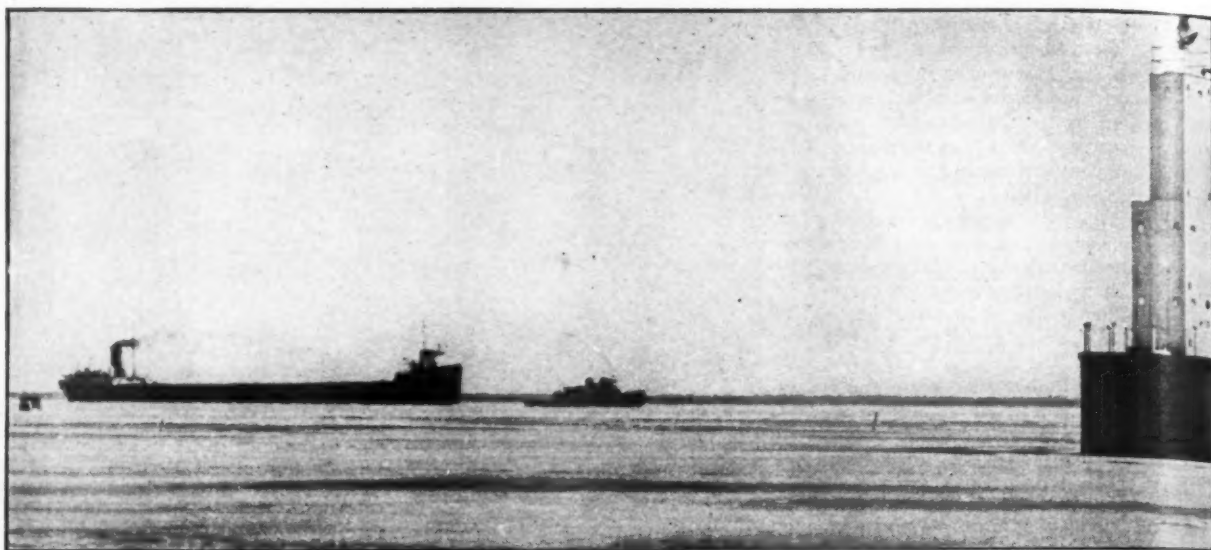
This type of W-S hydraulic press loads high-explosive shells. It helps pack a punch into axis-blasting projectiles.

It is one of many types of W-S presses doing war jobs. Others straighten gun barrels. Still others shape the steel of Victory ships. And W-S valves and forged steel fittings serve wartime industry by the hundreds of thousands.



*For Victory
Let's all be Scrappers*





Behind the doughty tug John Roen III, the season's first iron ore shipment leaves Escanaba, Mich., aboard Inland Steel's carrier, P. D. Block (above). The Coast Guard's

ice breaker Sainte Marie (below)—converted from a powerful car ferry—rammed through the 20-in. ice pack to open the channel and get the shipping season under way.

Ore Season Cut

First carriers crashed through from Escanaba, but ice halts Lake Superior shippers at the Soo bottleneck.

Another back-breaking season faces Great Lakes iron ore shippers. Their record haul of 92,076,781 tons last year (BW—Dec.19'42,p17) was facilitated by an early thaw and a late freeze in the Lakes which stretched the season to 254 days, from Mar. 23 to Dec. 17.

• **Shippers Glum**—This year, confronted by WPB's demand for 96,000,000 tons, shippers are glum. They have missed the early thaw, and they are not so optimistic as to expect a second successive freeze as late as Dec. 17. They are haunted by memories of past Novembers when northern blasts halted navigation by Armistice Day.

The first ore carriers from Escanaba, Mich., plowed through the ice behind an ice-breaker on Apr. 4 and took a week to reach Indiana Harbor, Ind., at the lower end of Lake Michigan, with ore for Inland Steel Corp. First ore carrier to negotiate the downbound passage through the Straits of Mackinac was the Cleveland Cliffs Iron Co. freighter, Presque Isle, loaded with 5,800 gross tons for Republic Steel Corp. at Cleveland.

• **Soo Impassable**—While these forced movements from Escanaba were developing, Lake Superior shippers gnashed their teeth at the impassability of the Soo Canal, bottleneck of the great northern ranges. Their only comfort was that

the ore fleet has been expanded by eight new vessels of the U. S. Maritime Commission and eight more are promised by Aug. 1. This will bring the fleet to 321 boats with aggregate capacity of 3,018,140 gross tons.

The tugboat, John Roen III, and the state car ferry, Sainte Marie, opened Escanaba navigation Apr. 3 when they crashed through 20 inches of ice in Lake Michigan to open a channel to the Chicago & North Western Ry. ore docks. The steamers, P. D. Block and L. E. Block, sister ships in the Inland Steel Corp. fleet, pushed through the following day with their cargo for Indiana Harbor.

• **Clogged Dock Hoppers**—The freeze hampered loading as well as navigation, for the stockpiles of ore were frozen and great chunks of it clogged the dock hoppers. Stockpile loading had to be abandoned, and the trains moving ore to the docks had to be loaded directly from the mines.

Escanaba's 750-car capacity was heavily overtaxed. Normally it takes four to five hours to load a carrier, but shortage of dock and yard facilities, in addition to the complications arising from the freeze, caused distressing delays. During the first week, as many as 15 boats lay at anchor in the harbor waiting to be loaded.

• **Diversions Ordered**—Heavy diversions of ore from the Gogebic and Marquette ranges contributed to the jam. In past years, most of the Escanaba ore has come from the Menominee range. Last year a few trainloads came from the Gogebic, which normally ships through Ashland on Lake Superior. The Office of Defense Transportation, intent on conserving vessel trip time, ordered a greater



volume of Marquette ore diverted through Escanaba. Last year this diversion relieved the congested Marquette docks on Lake Superior of about 1,250,000 tons.

To help avert a jam, ODT and WPB last fall approved plans for expansion of the dock facilities at Escanaba, including additional docks and classification yards with a capacity of 20,000 cars (BW—Oct.10'42,p18). At the bottom of this plan lay fears that the Soo was far too vulnerable for comfort in time of war.

• **Project Slashed**—But as fears diminished, the scope of the new installations shrank in proportion. Instead of six docks, provision was made for two when work was begun last October. In March the project was cut again (BW—Mar.6'43,p19). Washington ordered that one of the docks be carried to within 60 days of completion and construction arrested on the other, which is about one-fourth completed. Grading and filling for the huge classification yards is well along, but no track has been laid and no road-bed improvements made on the railway connecting Escanaba with the Gogebic and Mesabi ranges.

We're not interested in ZOOT SUITS

but we are interested
in the phenomena
of change...

We're not rug cutters, and we're distinctly not "right with the rags." We don't wear a "solid suit of threads," padded at the shoulders like a lunatic's cell, with the "jut cuts" and the "reat pleats," the "cleave sleeves" and the "drape shape." That sartorial throw-back of a juvenile ego is definitely not down our alley.

We're specialists in internal grinding problems, and Zoot suits (we fervently pray) won't wield their foolish influence upon the wheels of industry . . . but many a simple fad has!

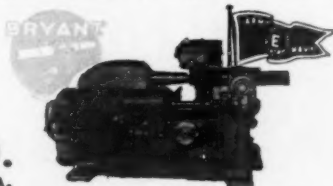
When a boy and a girl once sat in a hammock, and he thrummed a mandolin and she softly sighed, "I just love your new soft collar" — the celluloid collar market quietly vanished from this earth . . . And the horse-and-buggy business employed a million men — until an explosive contraption, deplored as a dangerous fad, noisily disemployed them and put ten times their number to work.

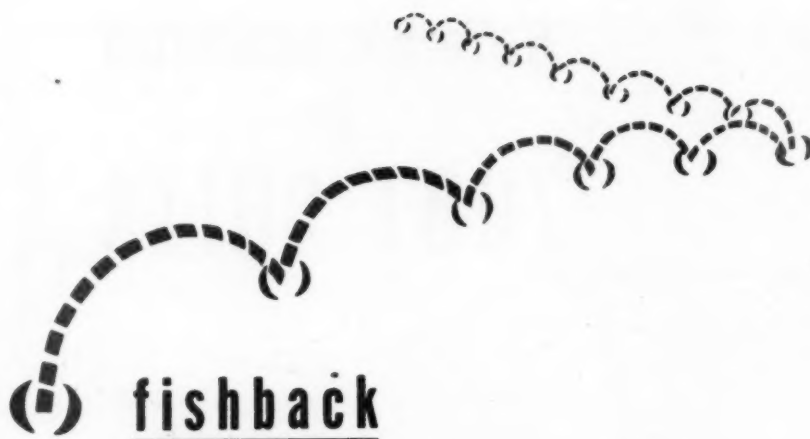
No, we're not interested in Zoot suits, but we are interested in the phenomena of change. And this is the fastest-changing period in all of industrial history. As a result, many businesses, seemingly on the rise, are actually on the brink of failure in the post-war world of better and cheaper materials.

We've developed many new techniques in grinding these materials, and we believe that this knowledge can be of greater value to manufacturers today than ever before. Bryant's Consulting Service is available to you at all times, and we urge you to call upon us now!



BRYANT CHUCKING GRINDER CO.
SPRINGFIELD, VERMONT, U. S. A.





fishback

IS A WORKING VERB!

When Business Week's editors drop-in a parenthesis which says, for instance, (BW—Mar.20'43,p15) they are *fishbacking* the story—giving visual evidence of the fact that business news of this day is but the most recent of a continuing stream of news of the week or the month or the year before.

Every one of BW's editors fishbacks every BW story . . . sometimes using the parentheses, other times using phrase fishbacks, but always using his authoritative experience to connect an item with past BW reporting.

That is one reason why BW readers, when they in their other reading come across a feature article on a business subject, have the feeling they've read it all before, in Business Week . . . when it happened . . . step by step! It is why management-men, advertising men included, follow Business Week constantly to keep abreast of the swiftly flowing currents of dozens of serial business-action stories.

Fishback is a working verb in these editorial rooms—it has as its constant object completely useful news!



News-base of Management's Decisions

Rugs in Doubt

Deep slashes in materials, plus labor troubles, add up to a pessimistic outlook for the floor covering industry.

Despite Army and Navy demands, labor worries, and material shortages, the 35 mills of the wool carpet industry and the 15 plants making fiber rugs and linoleums have been making profits, but they look to the future with some doubt. Fiber rugs are hit least of all, hard surfacings sold 15% more in 1942 than in 1941, and wool users have benefited by liquidation of big inventories.

• **Fiber Is Plentiful**—The fiber people seem to be sitting pretty. Their plants are not in critical labor areas, special tough yarns made from wood are fairly plentiful, and warm weather brings more buyers. Besides, consumer acceptance of fiber floor coverings in some areas seems to exceed that for wool rugs containing rayon or other substitutes.

Big worry of linoleum mills is linseed oil. None is coming from Argentina where an estimated 60,000,000 bu. of flaxseed was harvested last year; there is no ship space. American flaxseed production was 43,000,000 bu. in 1942, and Canada helped by running its yield from 5,000,000 bu. to 20,000,000 bu.; but transportation remains tight.

• **Linseed Supplies Cut**—Then, Apr. 1 brought an amendment to WPB's Order M-71 curtailing use of linseed oil to 50% of the 1940-41 average. The price, meanwhile, has gone up from 8¢ to 14.4¢ per pound, and a new hydrogenation process threatens to gobble up more of the supply than linoleum mills like to think. This process turns smelly linseed oil into good edible shortening (BW—Feb.20'43,p48).

The big three wool carpet mills—Bigelow-Sanford, Mohawk, and Alexander Smith—are converted to war work, as are most of the other rug and carpet plants. From them all rolls a vast yardage of woolen military blankets, cotton duck for tarpaulins, tents, gas masks, fatigue uniforms, belts, machete sheaths, and a dozen other items.

On items like canvas, the Army is ordering now for 1944 contrary to its usual policy of ordering textiles only six months in advance. The reason is that the Army forced the mills to convert in such a big way in the first instance that it now feels some responsibility for keeping this excess capacity going. But, though the companies must have this war business, it won't keep alive consumer demand for brand names on good rugs.

• **Wool Curtailed Sharply**—WPB restricted carpet wools in January, 1942, to 50% of the 1941 rate, and on Apr.

I cut it again to 25%—mainly because none of the coarse wools used in carpets is produced in the United States.

Imported carpet wool formerly came from the Argentine (warehouses there now hold 100,000,000 lb.), from China, India, and New Zealand. It still comes from Scotland, but not fast enough. So last year only 43,000,000 lb. of scoured wool could be used by the mills which had used 139,000,000 lb. in 1941.

• **Substitutes Also Hit**—Rayon makers offered the first help and developed tough yarns that were excellent, in mixtures with wool. Then, as the rayon situation became tight, cotton yarns were sought for backing of all-cotton floor coverings. This demand increased when jute was banned. The jute for making burlap backing came from the East Indies and India; now it is needed for agricultural bagging, sandbags, twine, etc.

Mohawk was the only mill that had its own cotton spinning plant and, as other demands for cotton grew, the makers of cotton yarns were soon swamped. Cotton takes color well but soils more easily than wool or rayon. Priorities of A-1-a were slapped on cotton yarns Mar. 1, however, and OPA says the shortage will get worse.

• **Labor Problems Worst**—The biggest headache in wool carpet factories is labor. Although only 30,000 employees are involved, and wages are high enough to compete with other war industries, the mills are having trouble with new unions, with state laws (as in New York) which forbid women's working after 10 p.m., with locations in critical labor areas, and with loom workers who feel they are not really doing war work.

Alexander Smith is lucky to be in Yonkers, N. Y., where employees can walk to work from houses that are not overcrowded or expensive. However, Bigelow-Sanford, in Thompsonville, Conn., is halfway between Curtiss-Wright (Hartford) and Colt (Springfield) war plants. Mohawk and Bigelow-Sanford, at Amsterdam, N. Y., are only 16 miles from General Electric and American Locomotive (Schenectady).

• **Rug Bargains Proclaimed**—Dyes are no worry in this war. Neither are sales, although the buying wave as yet has not hit home furnishings, and OPA claims real bargains are lying in the rug and carpet departments. Wholesale business last year added up to \$200,000,000—only \$10,000,000 less than in 1941. Output was another story: \$90,000,000 last year compared to \$210,000,000 in 1941.

Observers detect a trend in Alexander Smith's plan to drop jobbers and deal directly with retailers. Worth noting, however, is that Mohawk made more money through jobbers (\$1,600,000 on \$30,000,000 sales) than Bigelow-Sanford (\$1,200,000 on \$41,500,000) without jobbers last year.

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The ABC System gives merchants insured protection against check-cashing losses, and of course it helps increase their own trade.

If you now pay with ordinary, hard-to-cash checks, you are risking your employees' good will. If you pay by cash, you are risking hold-ups and loss. The ABC System removes *both* dangers.

For more information about this modern, safe and convenient method of wage payment—mail the coupon.

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Helium's Rebirth

Four new plants to step up output to 40 times prewar rates; postwar value seen in welding light metals.

Helium gas, most useful in war for blimps, soon will be produced at a rate 40 times that of prewar days. By the end of the year, four new plants will have been added to the two now operating in Texas. And if present production schedules are maintained, all Army and Navy demands will be met.

• **No Convoy Loss**—Buoyant, noninflammable helium is vital for the Navy's airships. Not a vessel has been lost from a convoy shepherded in the Atlantic by a blimp. One blimp has shown the great endurance of its kind by traveling 3,000 miles to an overseas base.

Other uses for helium are in deep-sea diving, in pneumonia cases, in caissons where the high air pressure tires the workmen and causes "bends," in escapes from sunken submarines, and in heliarc welding of magnesium.

• **Recover Quickly**—Men emerging from caissons into normal air pressures recover in a fraction of the time formerly needed if helium is used. Added to oxygen in hospital uses, helium prevents possible explosions or fires.

At the turn of the century, scientists found helium in gases given off by mineral springs in Virginia and in Germany's Black Forest. A town's bitter disappointment led to its discovery in Kansas. Wild hopes of gas riches had fevered the town for days—when it was discovered that the gas would burn no better than wet wood. Analysis showed the presence of 2% helium, which acted as a damper. As uses for helium were discovered and production methods resulted in extraction of helium that is 98% pure, things looked brighter.

• **Smother's Magnesium Flame**—After the war, helium will be more important in welding than in blimps. Magnesium would burst into flame while being welded if not smothered by the gas.

PUBLIC POWER LAW FAILS

Colorado's power bill, which would have legalized a state power authority to take over Public Service Co. of Colorado and other big utilities that may be orphaned by working of the holding company law (BW—Mar. 20 '43, p. 22), didn't reach a vote in the Assembly. However, the lower house created an interim commission to work on the subject, and to ask the governor to call a special session if the Securities and Exchange Commission or other government body appears likely to step in and take over Colorado utilities.

AGRICULTURE

Texas Slighted?

Brownsville, with its mill for crushing castor beans, feels that it got the brushoff in big U. S. drive for production.

The prideful and progressive people of Brownsville, Tex., read of Washington's frantic efforts to increase production of castor beans and wondered why their pioneering in this field had been slighted. They claim that the \$100,000 Brownsville plant owned by M. D. L. Van Over is the one mill in the country designed exclusively for pressing castor beans. So far it has only had sufficient offering to operate a day or two at a time, and prospects remain dark, though Uncle Sam is sponsoring a large crop.

• **Many Uses for Oil**—The country is said to be 400,000,000 lb. short of castor beans and is running on about one month's visible supply. While the layman thinks of a purgative when castor oil is mentioned, the manufacturing executive recognizes it as an industrial and military oil of unique virtues. It takes the place of tung oil as a drier in oils and varnishes. It is valuable to armament because it flows in the coldest weather. This and its solubility in alcohol make it a perfect hydraulic fluid for operating brakes on ground vehicles, for absorbing the recoil of artillery, for working bomb bays and turrets on bombers, for many other essentials. Brazil has enough castor beans on hand to supply our needs, but (as in the case of coffee) ships aren't available to bring them to this country.

The Brownsville mill was the result of years of experiment with castor bean culture. Van Over formerly was with the Woburn Degreasing Co., Harrison, N. J., large users of castor oil. He thought American farmers ought to grow the castor bean which once was a common crop in the Ohio Valley but for many years has been imported from Brazil, India, and other countries to the tune of nearly 300,000,000 lb. annually.

• **Early Efforts Failed**—In 1938, Van Over brought his idea to Texas. He and Commodore B. M. Hatfield, an apostle of better agriculture, induced farmers in the lower Trinity Valley to plant castor beans. Growers lost interest because this was pre-Pearl Harbor, and prices were too low to pay for the tedious hand harvesting.

Van Over then shifted to the lower Rio Grande Valley where he found wild castor beans in hearty growth. The Brownsville Chamber of Commerce took up the idea, and farmers thereabouts

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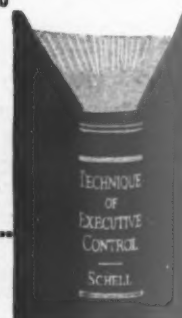
By ERWIN H. SCHELL, Professor of Business
Management, Massachusetts Institute of Technology

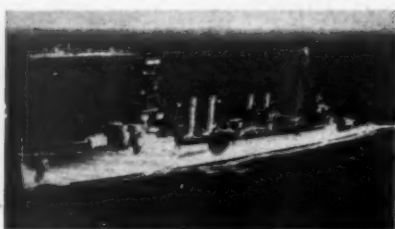
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Cruiser on epic voyage brings wounded home with aid of



Refrigeration

Set on fire, her rudder disabled, and her bow flooded when hit by Japanese bombs in a fight off Borneo, the U. S. S. Marblehead was brought home by her heroic crew in an "impossible" voyage that has become a saga of the sea. Three times Radio Tokyo announced she had been sunk!

For nearly ten years this notable Cruiser has carried two Frick refrigerating machines. Upon her return, Rear Admiral E.



The Marblehead was steered by her engines all the way to Ceylon, after a bomb had pierced her after deck and wrecked the rudder gear.

L. Cochrane wired us: "One of your ice-making plants played an important part in giving relief and comfort to a number of the ship's company who had received serious burns."

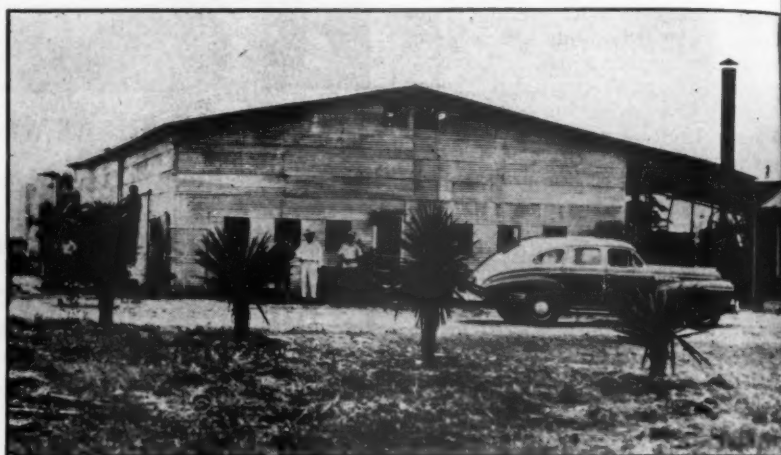
The Marblehead is but one of dozens of vessels of the U. S. Navy—battleships, destroyers, submarines, etc.—equipped with Frick Refrigeration. Passenger ships, tankers, tramps, tugs, dredges, yachts, fishermen and river boats—all find Frick Equipment equally indispensable.



The Marblehead had to stop three times for repairs on the long voyage home from the Java Sea.



M. D. L. Van Over's Brownsville (Tex.) mill (below) is the only one in the United States designed solely to crush castor beans—but it has few to crush. And although the mill has a reported daily capacity of eight tons of oil, its operations are uncertain because of the government's decision to hold 1943 bean harvests as seed for future planting. Farmers in southeastern Texas (right) and seven other states are being guaranteed \$120 a ton, but the lower Rio Grande Valley is not in the program. So Van Over is seeking supplies from Mexico, though with no assurance the stuff will be allowed across the border.



planted some 5,000 acres. Yields were as high as 1,600 lb. to the acre without irrigation. But the price (\$60 a ton for shelled beans) didn't pay, and again planters lost interest.

● **Rapid Rise in Price**—In 1941, Washington decided it would have to grow its own castor beans. Goal was a 3,000,000-lb. seed stockpile. Government seeds were provided farmers in Texas, Oklahoma, Missouri, Tennessee, Kansas, Kentucky, Illinois, Indiana, with the planting of 500,000 acres as the 1944 objective. Growers were guaranteed \$70 a ton for shelled beans of the 1941 crop, \$80 a ton for last year's. This year's price of \$120 a ton for unshelled beans reflects the desperate condition of stocks.

Van Over says that he has been given the brushoff in Washington though he offered his 140,000 lb. of seed stocks and his experience. Nevertheless, he went ahead and built his present pressing mill—getting around priorities by collecting boilers, tanks, refining columns, and retorts wherever he could pick them up. Claimed capacity is eight tons of oil every 24 hours.

● **Valley Feels Slighted**—So far as Brownsville knows, there is no plan to use the Van Over mill for the govern-

ment-sponsored crop. An added irritant is the fact that Washington's plans left out the lower Rio Grande Valley which had done so much experimental planting. Farmers in the valley are wondering whether to plant Van Over's seeds at their own risk.

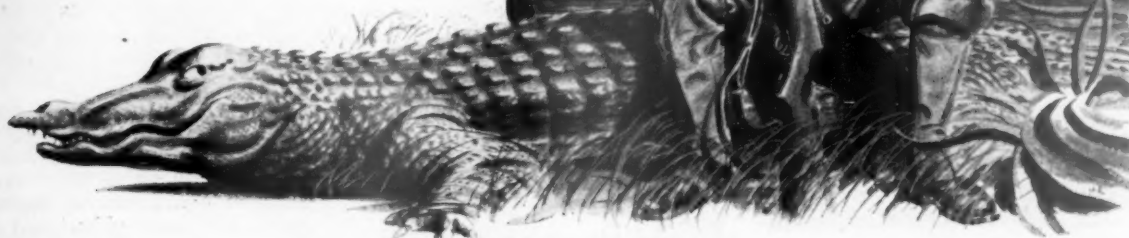
Meantime, Van Over has been invited by the governor of Tamaulipas, Mexico, just across the river, to promote a castor bean program there. But there is no assurance that Mexican beans would be allowed across the border for crushing at the Brownsville mill.

● **Good-Neighbor Angle?**—There is some dark speculation over whether the Brownsville area is the victim of good-neighbor diplomacy since castor beans form so important an item in Brazil's trade with us. This theory, it is felt, doesn't hold water in view of the current drive for domestic production in other areas.

A spokesman for the Commodity Credit Corp. denies that Van Over has been entirely neglected. He claims that last July the CCC gave Van Over a contract for 10,000,000 lb. of castor bean seeds to be grown this year in Mexico. These would not be crushed but would be bought by the CCC at the border

Secret Weapon tells where you are - and lights your cigarette!

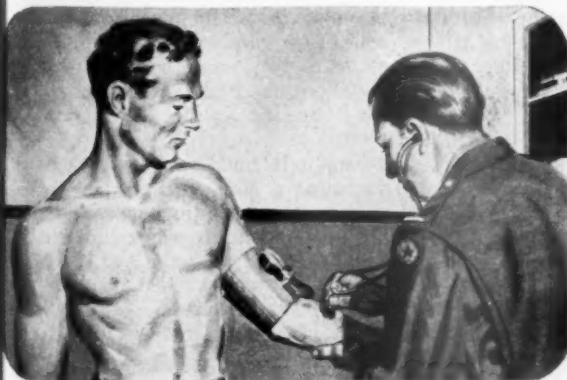
1 We make a lot of queer gadgets for the armed forces... some of them very "hush-hush". But we're especially proud of one simple device Taylor Accuracy is turning out by the hundred thousand. It not only gives a man his location, but keeps his matches dry... both a matter of life or death!



2 Not to keep you in suspense, it's a waterproof combination compass and matchbox of plastic... with a flint for striking fire if matches run out. Making compasses is of course an old story to Taylor craftsmen. But even the plastic of which the box is made was probably manufactured under Taylor Instrument control.



3 Can you find three things in this picture which Taylor Instruments helped to make? One is the powder inside the shell. Another is the rubber tire, which Taylor Accuracy helps to make from start to finish. Third is the uniforms, the cloth for which is dyed and finished under controls which we supply the textile industry.



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THE polished metal seating surfaces of this valve are so hard that they come close to diamond qualities.

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and distributed to American growers for next year's crop.

● **Not for Crushing**—One thing that apparently was missed by the Brownsville partisans is the fact that the entire 1943 crop is designed for seed rather than for crushing. A statement by the Dept. of Agriculture explains that "officials say it would be unwise to launch an extensive commercial production until more experience has been gained as to the exact localities in which castor beans can be produced most successfully."

The CCC boys don't quarrel with Brownsville's claim to having the only castor bean crushing mill in the country. But they assert that almost any bean crushing plant can be used to extract castor oil. Argument against this conversion is that castor bean pumice is a poison that might contaminate subsequent runs of edible oils and cattle meals; cleaning milling machinery is an expensive job.

Rich Byproducts

From culled lettuce leaves, a Californian produces a cheap livestock feed and finds a new source of vitamin A.

Tons of culled lettuce leaves, formerly wasted, soon will enrich the American diet with vitamin A. Credit for this development goes to a Salinas (Calif.) packer's consultant who discovered how to extract carotene from lettuce while setting up a plant to dispose of the outer leaves profitably.

● **Two Agencies Approve**—Encouraged by the Food Distribution Administration and given priorities by WPB, Jorgen D. Bering will have a vitamin plant in operation by June 1 when he expects to be shredding 250 tons of leaves daily. The project is privately financed.

First step of Bering's process reduces the leaves to a high-protein meal (10 tons from 250 tons of lettuce) which is comparable to alfalfa as a livestock feed. Further processing of the meal yields carotene (pro-vitamin A).

● **Wide Usage Assured**—Carotene now is used to fortify milk, to color butter and margarine, and has all the uses of vitamin A without the strong flavor of fish liver derivatives. Cheaply produced, its use can be greatly expanded.

CHICKS DO IT

Latest attempt of Owens-Illinois Glass Co. to combat absenteeism also gives a nice boost to the victory food drive, with 25 baby chicks as the weekly attendance prize at the company's Alton plant. There's been a noticeable reduction in absenteeism this month, and the chicks get the credit.

Trouble in Sugar

Government arranges for higher price on beets, offers inducement to plant split seeds, but crop will be smaller.

Nature grows sugar-beet seed in woolly bunches, and formerly farmers had to plant the whole bunch. Then someone had to crawl along the rows and thin each clump to a single plant. Finally "segmented seed," with the bunches cracked so germs could be planted singly (BW—Feb. 7 '42, p. 26), was originated at the Davis (Calif.) U. S. Agricultural Experiment Station.

● **Savings Show Up**—Now single-seed planting, taking six to seven pounds of seed an acre as against 20 formerly, has begun to pay off in other ways. The Dept. of Agriculture has modified suggested 1943 scales of beet-field wages so that the farmer with single seed will save \$3 an acre in labor costs over the man who plants bunched seed; he will pay \$7 to \$10 an acre for blocking and thinning as against \$10 to \$13, depending on the district.

For all-season costs, including harvesting (where labor's contracted for that way), he will pay, on the basis of an average 12-ton acre, from \$28.60 an acre to \$32.60, against a cost to the user of bunched seed of \$31.60 to \$35.60. On a time basis, standard wages will be 45¢ to 60¢ an hour.

● **Labor's Share in Price**—Nation-wide increase in labor costs (bunch-seed rate) averages \$6.59 per acre, says the department. Thus the farmer who plants bunched seed will give up to labor a little more than one-third of the average \$18-per-12-ton-acre raise over last year he'll get for beets.

Bowing reluctantly to the war need for juvenile labor, which the government had pretty much cleaned out of the beet fields, the department set a scale of two-thirds the full rate for workers 14 to 16 years of age. For inexperienced but mature help, learning to handle beets, the scale is three-fourths of the full rate.

● **Crop to Be Smaller**—Apparently no inducement is going to bring about normal sugar-beet plantings, however. The Dept. of Agriculture crop estimate is for 740,000 acres against the goal of 1,050,000. Last year's actual harvest was 1,729,000 short tons of raw sugar from 1,049,000 acres planted, 979,000 harvested.

Counting on a harvest from 700,000 acres this year, an average yield would mean 1,350,000 short tons this winter.

● **Competitive Crops**—Incentive payment plans for competitive crops, particularly dry beans and peas, might cut plantings even more. Over much of the



Throughout the Corn Belt, farmers are planting the first large-scale domestic crop of hemp, hoping to reap substantial profits with a harvest (above) within four months. Government

agencies are subsidizing the crop to supply the Navy and shipping industries with rope that formerly was made from Philippine fibers. After the war cheaper imports will be resumed.

sugar-beet area, there's still time to choose. Beet farmers are dissatisfied with 1943's \$11 a ton against \$9.50 last year. They wanted \$12.

Incidentally Uncle Sam, through benefit payments, and through purchase of the crop at \$11 through the Commodity Credit Corp. for resale to processors at \$9.50, will pay about \$4 of the \$11.

NO PRICE LID ON SWAPS

Farmers of the nation are getting back to "hoss trading" or the barter system in exchanging a surplus of livestock, farm machinery, field crops, or seed for some item they require.

Because of the scarcity of certain farm machinery, some types of seeds, stock feed, etc., and because of ceiling prices on used implements and second hand equipment, many farmers are reluctant to convert their surplus into cash for fear they cannot buy back with such cash the things they need. Hence, they prefer to exchange a heifer yearling for a disc harrow or a used tractor for a herd of hogs.

Even some implement dealers are encouraging the barter system with their used farm machinery in preference to complying with OPA regulations regarding ceilings. Although this barter plan is gaining favor throughout the agricultural states, the United States Soil Conservation Service for the district of Gregg, Upshur, and Smith counties, Texas, has taken the lead in helping farmers with any surplus of machinery, feed, seed, livestock, or soil rebuilding legumes to find a swap.

In other localities, the farm agents, feed dealers, implement dealers, and chamber of commerce secretaries are acting as a clearing house.

It's a Hemp Year

Seed supplies have been built up sufficiently to plant 185,000 acres in Corn Belt to grow much-needed fiber.

Hemp will bring a new industry to the Corn Belt this year and provide rope needed for the Navy. The narcotic weed (*Cannabis sativa*) has been grown in a small way in Wisconsin for years from seed produced in Kentucky, but 1943 will find it an industry in the Middle West because of the loss of Philippine fibers.

• **Soil Governs Growth**—Rich prairie soil good for corn is needed for hemp. Richer muck soils produce an inferior fiber, and on poor soils the plants grow too thinly to crowd one another into the height needed for the best fiber. Good land for hemp is found in southwest Wisconsin, in Minnesota, Iowa, Illinois, Indiana, and Kentucky. Best plants are five to eight feet tall.

Farmers are expected to make a bigger profit than they would from corn, but the Dept. of Agriculture doesn't want hemp to replace any vital food crops and hopes growers will add the fiber crop to others usually grown.

• **A Narcotics Problem**—Because the drug marihuana is contained in the leaves of the plant, the Bureau of Internal Revenue will police the six states concerned and require that each grower register and account for his crop. High fences also are used to discourage addicts.

Sites for 42 new hemp mills, in addition to the six commercial mills now



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SURE, Maine's a great place for trout and landlocked salmon. But Maine's a whole lot more than that!

Maine's an ideal state for locating mills, plants and factories—because of these five all-important factors:

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● The versatility of the Baker Crane Truck is demonstrated by North American Aviation, where it speeds many assembly operations on the B-25 Bomber and the P-51 Mustang Fighter. Among the services it performs are moving fuselages into assembly positions, assisting in the installation of engines and propellers,

and general heavy duty around the plant. North American also uses Baker Hy-Lift Trucks for handling heavy dies.

Baker Trucks are contributing to war production in hundreds of other plants. A Baker Material Handling Engineer will be glad to show you how our equipment may solve your problems.

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of the Baker-Raulang Company
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Baker INDUSTRIAL TRUCKS

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If you are getting ready to swap your address for a new one, be sure Business Week (that's me) comes along.

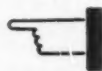
I start out from Albany, N. Y., every week and I can trail you to your new spot just as easy as I've been making the old one. And I'll like it, too.

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NAME.....
OLD ADDRESS.....
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built, have been selected—eleven each in Minnesota, Iowa, and Illinois; six in Wisconsin, two in Indiana, and one in Kentucky. A mill will cost \$351,500, including about 40 acres of land, a tractor, two trucks, harvesters, binders, and necessary buildings. Temporary construction is planned since it is likely that, when cheaper Philippine hemp returns to the market, the American industry will be scrapped. Defense Plant Corp. will pay for the mills, and Commodity Credit Corp. will buy the hemp.

● **How It Is Handled**—Hemp is a quick crop. Planted with a drill in April or May, it need not be cultivated and is harvested in August and September. After cutting, the stalks are left on the stubble to "ret" in the weather, usually taking less than a month. They should be turned once, picked up by hand or machine, shocked, and then taken to the mill.

Yields per acre average 450 lb. line (long) fiber and 400 lb. tow (tag end) fiber. Seed crops require cultivation and are grown in Kentucky because a longer season is needed. Rains last autumn in Kentucky cut the yield of seed to 230,000 lb.—about half of what had been hoped for (BW—May 30 '42, p14)—so this spring's planting will total only 185,000 acres for fiber plus 50,000 acres for seed. In 1940, only 1,950 acres were planted; in 1941, 7,500 acres.

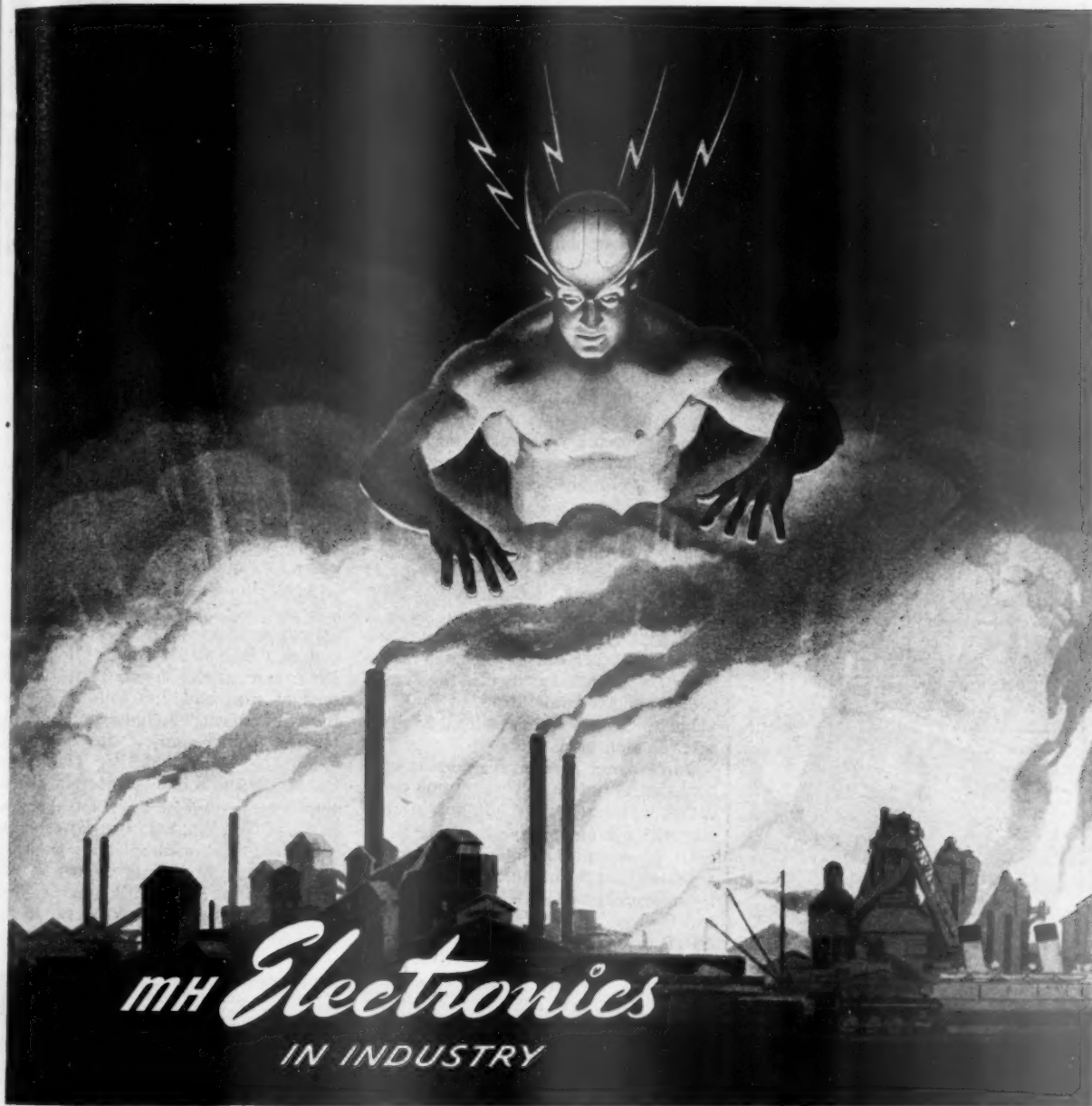
Home-grown Drug

In a cooperative venture, tobacco farmers produce a crop of belladonna, averting serious war shortage.

Small in value and size but large in importance to human life is the world crop of belladonna. Before the war, the United States imported between 200,000 lb. and 300,000 lb. annually from central Europe, paying 12¢ to 15¢ a lb. When war cut off foreign supplies, doctors were gravely concerned because belladonna is necessary to dilate pupils in eye examinations, to control nerves and muscles in whooping cough and other spasmodic disorders, to stop internal bleeding from wounds, and to serve as a local pain-killer.

● **Domestic Supply Assured**—Thanks to cooperative effort, there is now plenty of this important drug for both civilian and military medicos. Much of the supply is a home-grown crop of almost 400,000 lb., promoted by S. B. Penick & Co., New York botanical drug dealers, with the aid of the Dept. of Agriculture and the University of Wisconsin.

Penick started the ball rolling in 1941 when seeds were flown from Switzerland at a cost approaching \$35 an ounce, approximating the value of gold. Since



In 1947, M-H/Brown Electronics will usher in a new day in the peacetime manufacturing world. In the processing of steel, oil, ceramics, textiles, paper, rubber, foods — to name but a few — M-H Electronics will reduce spoilage to a minimum, smooth out production, improve efficiency. Applied by Minneapolis-Honeywell and M-H/Brown engineers, M-H Electrons have now gone

to war in plane, tank and ships, as well as in manufacturing processes in war production plants. But watch and wait for their peacetime march to the aid of Industry. M-H Electrons are coming! Minneapolis-Honeywell Regulator Company, 2728 Fourth Avenue S., Minneapolis, Minnesota. In Canada: Toronto, Ontario. In Europe: London, England; Stockholm, Sweden.

★ Listen: "JOHN FREEDOM" — Blue Network Coast to Coast every Wednesday, 9:00 to 9:30 P.M. Eastern War Time; or see your newspaper. "The Most Dramatic Show on the Air"

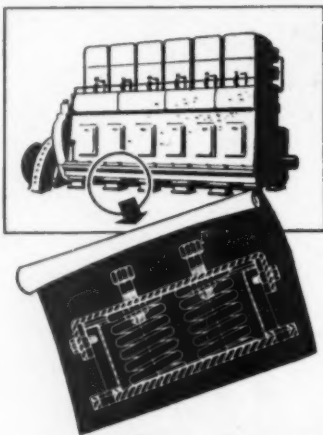
INSTRUMENTS BY **BROWN** FOR INDUSTRY
MINNEAPOLIS-HONEYWELL
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MORE POWER TO THESE

"JEEPS" OF THE SEA!



—WITH DIESELS
CUSHIONED ON
MUEHLHAUSEN SPRINGS!



THE powerful diesels of this peppery little sub-chaser throb with the thundering strength of a thousand horses—but develop vibration which must be harnessed. To absorb this vibration, and thereby utilize maximum power, the engines are set on cushions of steel—Muehlhausen Springs incorporated in Hussman mountings.

The successful performance of these springs demonstrates the skill with which Muehlhausen engineers solve the many problems created by volume production as well as by the working conditions of the application. Such heavy, hot-coiled springs must be produced by the thousands to identical load and dimensional requirements—must be made from material which will withstand corrosive action of salt-laden atmospheres.

MUEHLHAUSEN SPRING CORPORATION
Division of Standard Steel Spring Company
775 Michigan Avenue, Logansport, Indiana

MUEHLHAUSEN



SPRINGS

EVERY TYPE AND SIZE

experience was lacking, the first planting of these precious grains showed only how belladonna could not be grown.

• **Tested in Six States**—Penick had only 20 lb. of seed left. The U. S. Bureau of Plant Industry added a contribution. Greenhouse space and tobacco acreage were obtained in Pennsylvania, New Jersey, Ohio, Tennessee, Virginia, and Wisconsin. Belladonna (the deadly nightshade of romance and legend) is a cousin of tobacco, needs the same extremely rich land, the same painstaking, individual plant cultivation. Growers were given a unique contract by which they were paid for their land and labor, plus a good price for the crop.

Five million seedlings, transplanted twice by hand, were delivered to 216 farmers in the six states. Each was hand-set. As foreseen in the planning, plants in some areas thrived; those in others wilted. Pennsylvania and Wisconsin had lush yields of very high quality. The leaves were harvested like tobacco and handled on tobacco-rack wagons.

• **Cheap Labor Necessary**—The project was so successful that no crop will be needed this year. But careful records were kept and a seed reserve saved so that the project can be repeated when necessary. Yields of farmers in the Penick project ranged from 300 lb. to 1,000 lb. per acre. Some of them realized \$800 an acre for their crops.

Participants in a rival group discovered the limitations of belladonna cultivation when they were left holding the bag after a bumper harvest. These farmers lined up with Dr. John A. Borneman, a pharmaceutical manufacturer and professor of pharmacy at Hahnemann Medical College, Philadelphia. He induced 65 Pennsylvania tobacco growers to

plant 200 acres of belladonna. They were stimulated by talk of \$1.50 per lb. for their harvest.

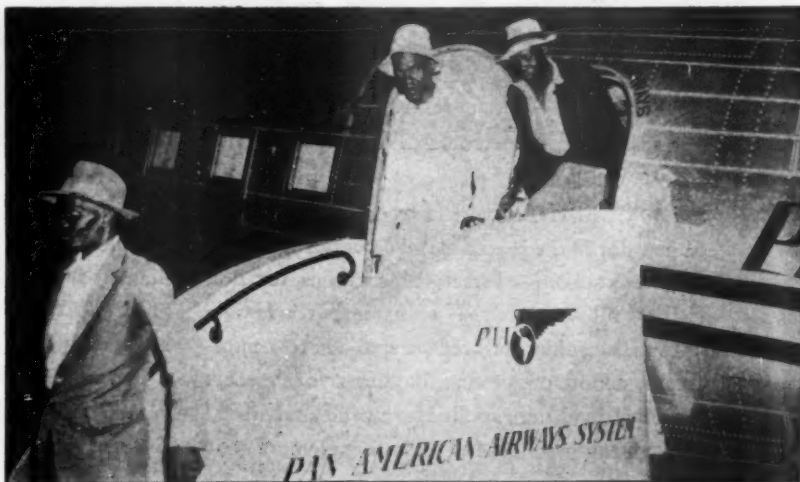
• **Good Yield, No Market**—Yields were abundant but the Borneman farmers discovered too late that Penick sales to the government killed their market. Some 40,000 lb. remain in their hands representing, they claim, 40,000 man hours of labor.

Belladonna is a vest-pocket crop a best; after the war American farmers won't be able to compete with the cheap labor of European growers.

FOOD OR MANPOWER?

Western congressmen and irrigation interests are needling WPB to allow resumption of irrigation and power projects halted last year to save materials and manpower.

The westerners argue that with an expenditure of approximately \$190,000,000, water could be brought to 800,000 acres now dry, and needed supplemental water to 2,000,000 acres now irrigated, providing food and fiber for several million people. They estimate the needed manpower at an average of 10,000 to the end of 1945, with a peak of 17,000 in 1944; and critical materials at 125,000 tons of steel and 700 tons of copper. Biggest projects include part of the Central Valley project in California, Colorado's Grand Lake-Big Thompson, the Anderson Ranch project in Idaho, the Altus in Oklahoma, the Yakima-Rosa in Washington, the Riverton in Wyoming, and uncompleted portions of the All-American canal project in Arizona. Neither the WPB nor the Food Administration has yet given ear to the western appeals.



IMPORTED HANDS

For quick relief from the tightening squeeze on domestic farm labor, Negroes are being flown in from the Bahamas by clipper plane. The British

government has approved the hiring of 2,000 subjects for work in critical areas. When the first contingent arrived in Miami last week, the workers were sent to a camp near Pohokey, Fla., for their work assignments.

WAR BUSINESS CHECKLIST

A digest of new federal rules and regulations affecting priorities and allocations, price control, and transportation.

Antifriction Bearings

WPB has imposed additional controls over production and distribution of antifriction bearings, supplementing the provisions of Order M-293 as they apply to this critical component. Beginning June 1, producers must schedule production for a 90-day period and for successive 90-day periods thereafter. It is required that 85% of scheduled production and 85% of monthly deliveries be on "production orders", defined as (1) orders for one or more bearings of a single size having a total price of at least \$500, or (2) single orders for at least 500 bearings of any one size. Purchasers' inventories of bearings are limited to a 60-day supply, or to minimum practicable working inventory, whichever is smaller. (Order E-10.)

Fish

OPA has placed its first price ceiling on fresh fish with an order limiting the amount which may be charged by fishermen for four species of tuna and two tuna-like species. (Regulation 366.)

Horse Meat

Since very little horse meat was sold during March, 1942—the base month of



BOMB PROTECTOR

Bombs are now traveling to warfronts in laminated paper rings (above), rather than all-metal shipping bands—a substitute that will save more than 8,000,000 lb. of steel monthly. The new hoop, containing only a light metal binder, was developed by the Alton (Ill.) Box Board Co.

GMFR—many slaughterers, wholesalers, and retailers now selling this meat have no base for fixing maximum prices. For this reason, OPA has set dollar-and-cents ceilings on horse meat at all distribution levels. (Regulation 367.)

Potatoes

None of the remaining stock of Maine potatoes may be shipped without a permit secured from the Presque Isle office of the Food Distribution Administration. To get a permit, a shipper must offer to sell the entire amount to federal agencies. That portion not purchased by the government to meet pressing needs will be released promptly for commercial shipment. (Food Distribution Order 49.)

OPA Policy Clarified

OPA has made it clear that repeal, revocation, amendment, or other modification of any price regulation does not release any person from liabilities or penalties incurred under the regulation in its original form. This is not a new policy but simply a clarification of a stand that has always been taken. (OPA Supplementary Order 40.)

Tire Inspection

Motorists who failed to have their tires inspected before the deadline (Mar. 31 for A book holders, Feb. 28 for B and C) may still qualify for renewal of their rations if they can give their local boards legitimate reasons for their failure. (Amendment 41 to Ration Order 5C.)

Hand Trucks

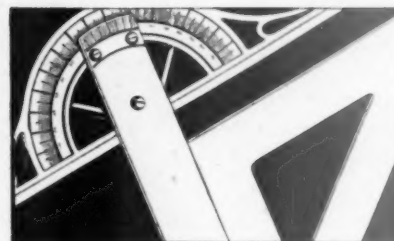
The use of steel, iron, aluminum, and certain other critical materials in the manufacture of hand trucks and similar materials-handling equipment has been severely curtailed by WPB. Orders for new hand trucks and parts (except bona fide repair parts) must bear preference ratings of AA-5, or higher. Restriction on use of rubber tires has been slightly relaxed. (Order L-111, as amended.)

Lumber

All lumber produced in the New England and Middle Atlantic states has been placed under dollar-and-cents ceilings by OPA. Regulation 368 fixes prices on hardwood lumber, and Regulation 219, which formerly applied only to white pine, has been revised to cover all species of softwood lumber.

Cotton Yarn

Manufacturers of coarse combed cotton yarn must set aside 65% of their production, and manufacturers of medium combed cotton yarn 40%, if it is necessary in order to make delivery on schedule to the Army or Navy. The former provision of the



QUICK ACTION ON
ENGINEERING PROBLEMS

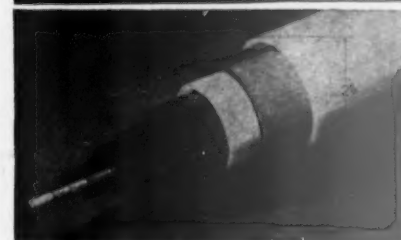
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**Hard-Hitting M-4 Tanks and M-10 Tank Destroyers
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THE Ford line for 1943 features the toughest Fords ever built—known in the Army as 32-Ton M-4 Tanks and M-10 Tank Destroyers.

But whatever you call them they're *Fords* through and through . . . Armored with Ford Steel . . . Powered by a V-type Ford tank engine . . . Built by Ford workmen with the skill, precision and cost-cutting ability learned in building more than 29,000,000 Ford Cars and Trucks.

Ford-made tanks *alone* are built, armored and powered by the same manufacturer! And like their peacetime predecessors, these wartime Fords have won the praise of the men who use them. In the words of one high Allied commander—"The Medium Tank M-4 is the answer to a tank man's prayer!"

Exact production is a military secret but these *models* are pouring off the lines in fleets. M-4 Tank output is far ahead of schedule. What's more, there's plenty of *extra capacity* to produce even more if required.

This is just one example of the way the men who built *your* Ford are doing today's big job. Others are the precision mass-production of aircraft engines for which Ford has received the Army-Navy "E", Liberator Bombers, Jeeps and Amphibian Jeeps.

Measured by any yardstick these wartime achievements of the Ford organization would be counted great. But we feel that *no effort short of Victory is enough.*

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FORD MASS-PRODUCTION LINES DELIVER FLEETS OF WEAPONS

M-4 TANKS • M-10 TANK DESTROYERS

PRATT & WHITNEY AIRCRAFT ENGINES

CONSOLIDATED LIBERATOR BOMBER PLANES

TRANSPORT GLIDERS • JEEPS

UNIVERSAL CARRIERS • AMPHIBIAN JEEPS

ARMY TRUCKS • TANK ENGINES

TRUCK AND JEEP ENGINES

TURBO-SUPERCHARGERS • GUN MOUNTS

RATE-OF-CLIMB INDICATORS

AIRCRAFT GENERATORS • ARMOR PLATE

MAGNESIUM CASTINGS

This list does not include other important Victory models now in production that cannot be named due to wartime conditions.

Listen to "Watch The World Go By" featuring Earl Godwin. Every night 8:00 p.m. E.W.T. on The Blue Network.



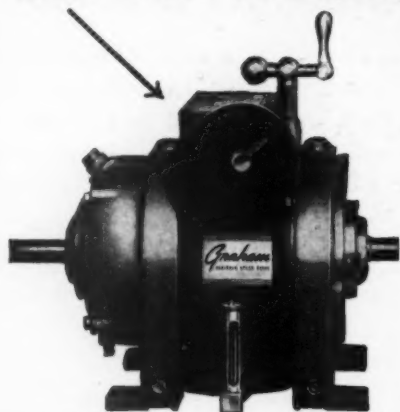
M-10 TANK DESTROYER



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 2. Full torque guaranteed over the entire speed range.
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- Machine designers who are modernizing for the post war market should investigate the Graham.

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William Ainsworth & Sons, Inc.
Denver, Colo.

American Electric Furnace Co.
(Two plants)

Ampco Metals, Inc.
Milwaukee, Wis.

Atlas Powder Co.
Apco, Ohio

Bardwell & McAlister, Inc.
Hollywood, Calif.

Bronson Reel Co.
Bronson, Mich.

Cleaver-Brooks Co.
Milwaukee, Wis.

The Cleveland Dental Mfg. Corp.
Cleveland, Ohio

Cole of California, Inc.
Vernon, Calif.

Consolidated Packaging Machinery Corp.
Buffalo, N. Y.

Defiance Machine Works
Defiance, Ohio

Dow Chemical Co.
Bay City, Mich.

The John Douglas Co.
Cincinnati, Ohio

Driver-Harris Co.
Harrison, N. J.

General Motors Corp.
Memphis, Tenn.

The B. F. Goodrich Co.
Los Angeles, Calif.

Harley-Davidson Motor Co.
Milwaukee, Wis.

Hawley Products Co.
St. Charles, Ill.

Hunter Illuminated Sign Co., Inc.
Flushing, N. Y.

Frank Ix & Sons, Inc.
(Two plants)

R. A. Jones & Co., Inc.
Covington, Ky.

A. B. Julliard & Co., Inc.
Aragon, Ga.

Lindberg Steel Treating Co., Inc.
Chicago, Ill.

The Mahoning Valley Steel Co.
Niles, Ohio

Malleable Iron Range Co.
Beaver Dam, Wis.

National Pressure Cooker Co.
Eau Claire, Wis.

The Norwich Pharmacal Co.
Norwich, N. Y.

Peerless Woolen Mills
Rossville, Ga.

Charles Pfizer & Co., Inc.
New York, N. Y.

Proximity Mfg. Co.
Greensboro, N. C.

Republic Drill & Tool Co.
Chicago, Ill.

Revolution Cotton Mills
Greensboro, N. C.

Rheem Mfg. Co.
Chicago, Ill.

Standard Steel Spring Co.
(Three plants)

Stupakoff Ceramic & Mfg. Co.
Latrobe, Pa.

United States Catheter & Instrument Corp.
Glens Falls, N. Y.

Michael Yundt Co.
Waukesha, Wis.

(Names of winners of the Army-Navy award for excellence in production announced prior to this new list will be found in previous issues of Business Week. The nation's food processing plants are eligible for the Army-Navy Production award. Both War and Navy departments have authorized the Food Distribution Administration to nominate candidates to be considered for the honor by the Army and Navy boards for production awards.)

order requiring manufacturers to set aside specified percentages in advance, without regard to orders on hand, has been rescinded. (Order M-155, as amended.)

Beer Bottles

In order to effect a considerable saving in glass, WPB has banned manufacture of one-trip, no-deposit beer bottles except for overseas shipment of beer. (Order L-103.)

Osmium

Nonmilitary use of existing stocks of osmium alloys, previously unrestricted (BW—Mar.27'43,p76), has been limited to 50% of 1941 consumption by WPB. (Order M-302, as amended.)

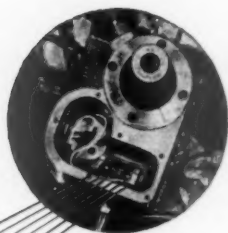
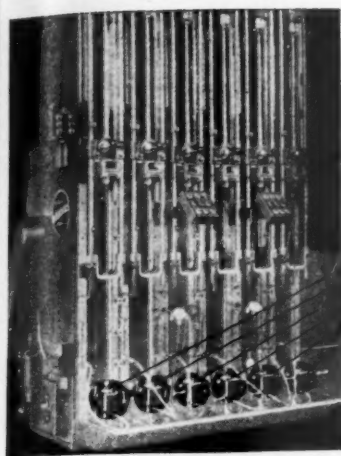
Other Priority Actions

Amendment 56 to Ration Order 11 exempts used and refined lubricating oil from fuel oil rationing restrictions in order to encourage its use as a substitute for heavy industrial fuel oil. . . . Order L-41, as amended, slightly relaxes restrictions on civilian construction. . . . General Order ODT 26A sets up strict operating restrictions on drive-yourself automobile

service, placing equal responsibility on the owner and the user. . . . Order L-253 restricts use of dogwood to manufacture of essential textile machinery parts. . . . Order L-103-a places temporary restrictions, expiring Sept. 30, on the amount of new empty glass containers that may be acquired by commercial users. . . . Cheese required to be set aside for government purchase under Food Distribution Order 15 may not be transferred from one assembler to another without specific permission. . . . Order M-307 establishes allocation control over processed industrial casein.

Other Price Actions

Amendment 3 to Regulation 295 authorizes an increase in the ceiling price on ethyl alcohol produced on the West Coast. . . . Regulation 369 sets dollars-per-ton ceilings on dry roofing felt. . . . Amendment 1 to Regulation 312 sets cents-per-pound ceilings on block and Canadian bag maple sugar and specifically exempts edible maple sugar from price control. . . . Amendment 7 to Regulation 306 adds canned spinach to the vegetables on which dollar-and-cents ceilings for the 1943 pack have been set (BW—Apr.17'43,p92).



High Opinion is Contagious

A man is known by the friends he keeps, so a product is known by the testimony of those who are familiar with it.

We have hundreds of customers who rely entirely on Micro Switch wherever a small, precise, rugged, dependable, and extremely sensitive line voltage switch is required. And we know them for our good friends.

But more times than we can count we have new customers come to us because others in the same industry employed the quality performance of Micro Switch. The use of six Micro Switches on the W. F. and John Barnes 6-Spindle Vertical Rifle Barrel Drilling Machine illustrated above is such an example.

Reputation of a product, it would seem, does not rest on claims made for it. Nor does opinion regarding it take long to formulate. For opinion is contagious and spreads swiftly on the recognition of familiarity.

Undoubtedly we could make many claims for Micro Switch. But we are more than willing to accept the opinion of those production engineers and executives who insist that nothing can take the place of Micro Switch in their products as they build them today and as they plan them for the future.

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ing electrical characteristics, housings and actuators which may be a part of Micro Switch, are available to your engineers now. We will be glad to send as many copies as your engineering departments may require.

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THE WAR—AND BUSINESS ABROAD

Impact of Migration Weighed

Bermuda conference on policy toward refugees means more than just settling a humanitarian problem because the post-war economic world will owe much to immigration trends.

American business has a clear dollar-and-cents interest in the monetary and food conferences coming up in this country within the next two months (BW—Apr. 3 '43, p108). Less talked about, but with potential long-run importance of almost parallel magnitude, is the current British-American conference on refugees in Bermuda.

● **Laying the Groundwork**—Like the monetary conference, which began separately in London and Washington and will wind up in our capital, the Bermuda meeting is exploratory and at a later date will involve other United Nations—and possibly interested neutrals.

Britain comes to the conference with a noteworthy record behind her—5,000 Polish children are in, or en route to, India; the Middle East is sprinkled with Europeans who fled from country to country ahead of the German advance; and England herself has been sanctuary for oppressed individuals as well as headquarters for nine exiled governments.

Today the refugee question is humanitarian. Many countries have volunteered to provide a haven for the duration and a few have made permanent commitments. Other fast-growing industrial nations, quite apart from humanitarian motives, have announced intentions to seek larger populations in the future.

● **Shifting Populations**—Political refugees are primarily a wartime phenomenon. The peace to come, by constructing the bases of a better world, may eliminate refugees and at the same time, by making possible economic expansion in some areas, may create the need for important international adjustments in population.

Thus discussions of refugee movements assume added postwar importance. Just as Prime Minister Churchill and President Roosevelt drafted the Atlantic Charter, since approved by nearly 40 nations, so the Bermuda conference may provide a declaration of principles on which future immigration policies may be based, consonant, of course, with the economic limitations and political considerations of each nation.

● **Effect of Trade**—International migrations are closely related to international economic interdependence, and thus to the decisions concerning money and

trade that are yet to be made. It may be generally stated that a narrow and restricted system of exchange for money and goods—such as occurred during the 'thirties—will tend to constrict national welfare and discourage international migration. Expanding trade and rising living standards will create the demand for additional workers and stimulate migrations from overpopulated or economically depressed areas.

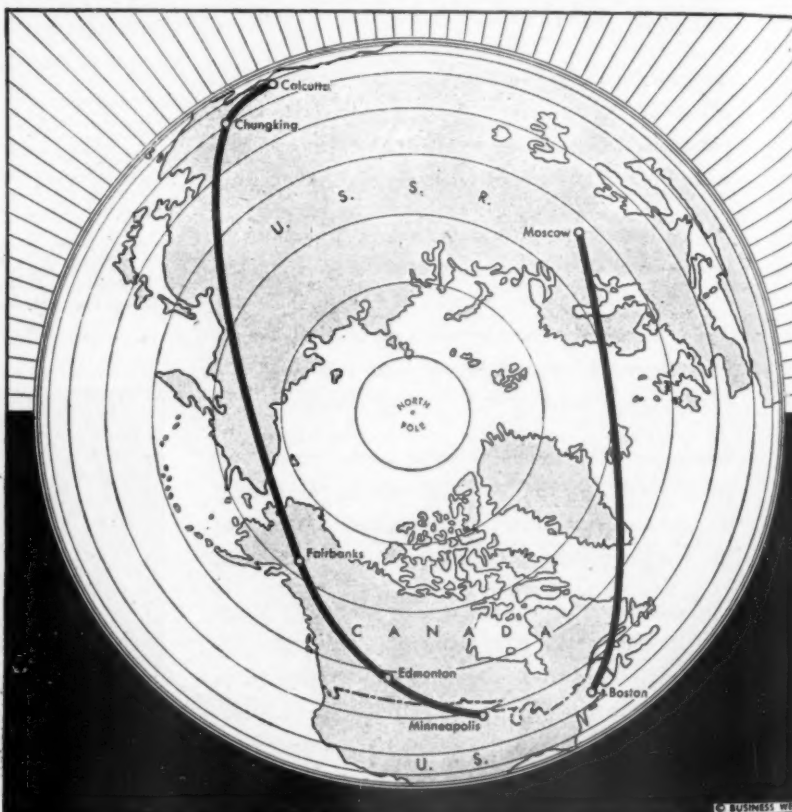
Envisaging a cyclical expansion of the world economy in the postwar era, Colin Clark, Australian economist, has projected population movements during the

next two decades in his recent book *The Economics of 1960*.

● **Estimates on Shifts**—Viewing current trends in 25 important nations, Clark tabulated those that may be expected to lose and gain citizens through migration in the period following the war:

Annual emigration from:	
United Kingdom	114,000
Germany	41,000
Netherlands	15,000
Italy	240,000
The Balkans	385,000
Poland	160,000
Lithuania	12,000
Czechoslovakia	25,000
U. S. S. R.	400,000
Hungary	20,000
Annual immigration into:	
France and Belgium	50,000
Sweden	33,000
Switzerland	7,000
U. S. A.	500,000
Canada	100,000
Australia	80,000
New Zealand	18,000
Argentina and Uruguay	175,000
Rest of Americas	449,000

● **Casualties a Factor**—When this projection was made, war casualties had not yet mounted to significant totals. Decimation of armies on the eastern front



Architects of tomorrow's world draw air routes in straight lines, but only those that tap important trade centers and fuel depots are likely to become commercial possibilities. Two U. S. lines have staked claims on routes that clip the Arctic Circle—Northwest Airlines has its eye on Calcutta; North-

east Airlines looks to Moscow. In addition, Swedish negotiators are heading for Washington to blueprint a line for Aerotransport—Stockholm to U. S. When it comes to signing agreements, however, it will be Canada, Britain, and Soviet Russia whose votes will dominate the final plans.

conceivably alter the status of Soviet Asia—likely now to be short of manpower for postwar industrial expansion and starvation and disease may remove Poland, Lithuania, the Balkans, and Czechoslovakia from the category of population exporters.

Nevertheless, it is significant that the World Bank analytically predicts that the Western Hemisphere will require 1,224,000 immigrants annually, or 87% of available migrants. The United States, Canada, Argentina, and Brazil will be the major areas of postwar colonization. **Argentina's Expectations**—In the past, Argentina has successfully absorbed large numbers of European emigrants and has officially envisaged a doubling of population after the war—from 5,000,000 to 25,000,000. Despite Argentina's role as a net food exporter, favorable conditions of trade, resulting in internal prosperity, have tended to draw farm workers into the cities for manufacturing and service employment. This has created measurable food shortages, especially in small-farm items.

Against future contingencies, Argentina might logically seek South Europeans to expand food production in the Pampas region. Dairy output might be expanded by encouraging immigration from Denmark and other Scandinavian countries—at the same time increasing home markets for surplus feed grains.

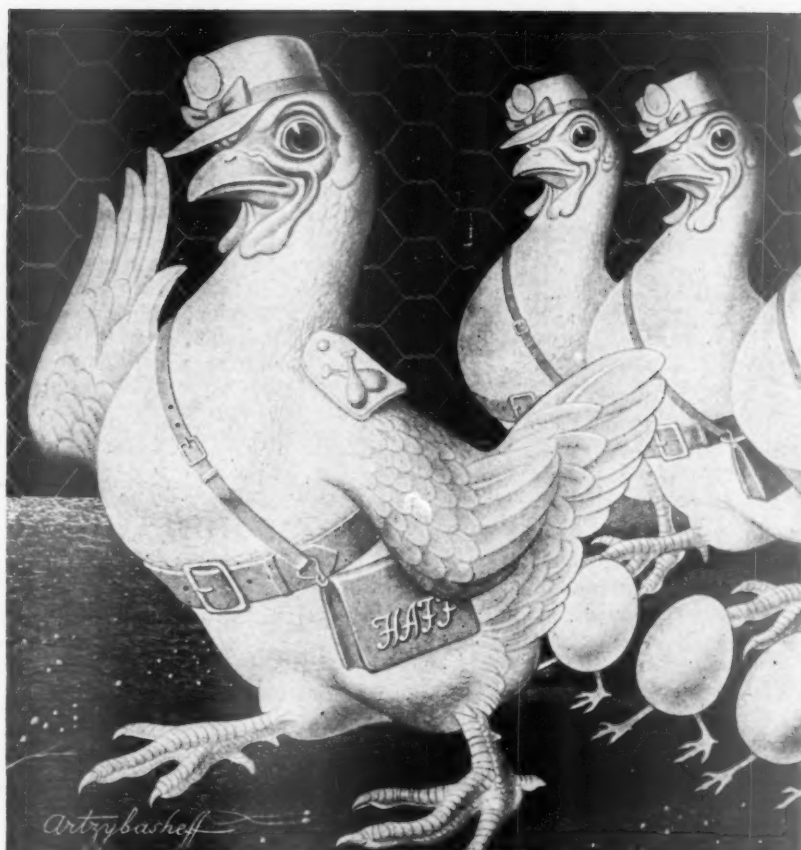
Opportunities in Brazil—In Brazil, where a postwar steel industry is germinating in Minas Geraes under war stimulus (BW—Nov. 28 '42, p18), Balkan and Polish peoples—as the U. S. has found in Gary and Pittsburgh—would apt themselves quickly to the type of employment which will be readily available. For the development of the Amazon valley, Brazil will need armies of settlers, primarily farmers.

Even the United States, hitherto a net food exporter although a heavy importer of special produce, will, with rising living standards, tax the food producing capacity of its farms and be forced either to buy city workers back to the earth with higher food prices and farm wages, or to encourage immigration of farming families.

Basic Importance—So, while Allied armies claim the headlines with continuing offensive victories, and while business men bone up on international trade and finance in anticipation of pending world conferences in Washington, the policies established at Bermuda—which may determine the course and even the possibility of postwar migrations—merit the interest of future-minded executives.

INDIA EYES PRODUCER-GAS

Increasing military activity in the India-Burma sector is highlighted by the government's recent threat to eliminate nonessential driving—as was done in



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With a slight pull of her fingers, heavy parts are placed in machine tools, lifted to inspection tables or assembled in their exact places. Many thousands of 'Budgit' Hoists are in use. There are more thousands of spots in war industries where women and 'Budgits' can take the place of men.

'Budgit' Hoists are portable, electric hoists with lifting capacities of 250, 500, 1000 and 2000 lbs. They are priced from \$119 up. Hang up, plug in, and use. For complete information, write for Bulletin 348.



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England last year—in order to conserve gasoline. At the same time, expansion of production of producer-gas plants for trucks and cars has resulted in a monthly output in excess of 3,300 units in 70 different manufacturing plants. Already 10,000 of India's 125,000 motor vehicles are operating on charcoal fuels.

To encourage conversion to producer-gas units, the government's War Transport Dept. has computed the savings obtained by switching from gas. Vehicles driving 2,000 miles a month will save \$65.50 monthly, permitting owners to amortize the investment in the producer-gas unit in from 4½ to 8 months, depending upon whether the unit installed cost \$300 or \$525.

Monsanto Cocoa

Plant going up at Bahia to extract butter for Europe; residues to be shipped to U. S. for caffeine content.

SAO PAULO, Brazil—Business leaders in Brazil are watching with considerable interest the move by Monsanto Chemical Co. to establish a local factory which will process theobromine from cocoa beans. The size of the factory—which is being built at Bahia in the heart of the coastal cocoa-growing region—indicates that Monsanto intends to continue the business beyond the wartime emergency which has precipitated the project.

• **Source of Caffeine**—Cocoa beans are an important source of caffeine. In normal times Europe buys large quantities of cocoa beans for the cocoa butter that can be extracted from them. Caffeine producers in the United States—among whom is Monsanto—buy locally and from Europe the cocoa residues after the fat is extracted. These residues contain theobromine which can be further processed into caffeine.

As a result of the shortage of shipping and the British blockade of continental Europe, wholly inadequate supplies of both cocoa beans and residue have been reaching the United States.

• **Conserve Shipping Space**—This is the reason Monsanto is building a plant at Bahia to extract its raw materials locally. The theobromine content is less than 2½% of the fresh cocoa beans, by both volume and weight. This means that, even in normal times when there may be no shortage of shipping, it will be highly economical to extract the fat from cocoa in Brazil.

As long as the shipping shortage persists, it is almost the only way in which Monsanto—and other users—can hope to secure adequate supplies of the raw materials necessary for the production of caffeine.

CANADA

Labor Pot Boils

Disputes threaten to set many of Dominion's biggest plants; jurisdictional battles among principal causes.

OTTAWA—Canada's spring freshet of labor trouble threatened last week to gush over the dikes of federal labor control, stopping production in several and semiwar plants.

An important factor is a race for recognition as sole bargaining agent for workers—between C.I.O. and A.F.L. exclusively except in Quebec where a strong Catholic Syndicate is a third important party. A.F.L. quarters allege that the church is intervening in the competition in Quebec.

• **Big Plants Involved**—Several big Dominion war industry units are involved in current bargaining-agency disputes. Most important are Aluminum Co. of Canada, Ltd., at Arvida, Que., and John Inglis Co., at Toronto, Ontario, largest Canadian ordnance producer.

At Arvida, the fight is between A.F.L. and the Catholic Syndicate. Deadlines for a strike in the big aluminum works was set for last week end but postponed through intervention of the Labor Dept. conciliation officers. In this case, a declaration by Ottawa war production control authorities that work stoppage will not be allowed is taken to mean that troops will be used if necessary to prevent a shutdown in the aluminum plant.

• **Other Strikes Loom**—At John Inglis a vote was taken this week to decide between C.I.O. and A.F.L. as bargaining agent for 15,000 workers. de Havilland Aircraft, Toronto, C.I.O. has won out over A.F.L., and a strike threat is lifted temporarily. Demands for union recognition by C.I.O. United Steelworkers threatens a tie at Hamilton Bridge Co., another war producer.

Dominion and Quebec authorities were trying this week to break a strike that suspended operations in three paper mills of Price Bros. where the Catholic Syndicate is battling A.F.L. In Nova Scotia, union leaders threaten resumption of the January strike in primary steel mills which was ended temporarily by wage and other concessions ordered by Ottawa.

In Alberta 17 mines of the big Drumheller coal field were idle this week following a general strike in protest against dismissal of a union worker for participation in an illegal strike in February. The strike, involving all operators and



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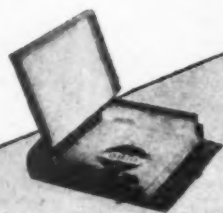
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the field, followed an arbitration board ruling upholding the dismissal.

● **Labor Relations Probe**—Two hundred representatives of 35 industrial, business, and labor organizations sat in a two-day session before the National War Labor Board last week in the opening of a public inquiry into unsettled labor conditions in Canada.

The probe was ordered by Justice C. P. McTague, new chairman of the recently reorganized NWLB. Formal open sittings will begin early next month. The current flurry of labor unrest is widely attributed to success earlier this year (BW—Jan. 30 '43, p. 32) of strikes in the steel industry.

● **Forced Bargaining**—Canada faces compulsory collective bargaining in industry-labor relations for the first time under a law enacted by the Ontario Legislature just before it wound up its 1943 session last week. The provincial government, in forcing through the measure, gave the brushoff to protests from industrial and business organizations and from some independent labor unions. As Ontario is the chief industrial province, it is believed other provinces may follow its example under pressure of labor groups.

Feature of the Ontario law is provision for a labor court (consisting of a judge of the Ontario Supreme Court) whose main function will be to rule on the claims of labor unions to be the chosen bargaining representatives of workers. Once a union has been accredited by the court, the employer must bargain with it.

● **Visible Drawbacks**—The court is given the function of compelling observance of collective bargaining agreements by both employers and workers, but no machinery is provided for the application of this compulsion. One enforcement instrument, however, will be the authority of the court to cancel registration of a union failing to respect agreements.

Seen as a chance for squeezing out plant unions and independents is a provision that bars collective bargaining rights from any union or other worker body influenced or dominated in any way by an employer. Big unions lose a point in a provision that a financial statement on union funds must be given to union members and to the Labor Court on demand.

CANADA STOCKS FOOD

OTTAWA—Canada's wheat stocks have jumped to a new high of 798,000,000 bu. compared with a little more than 550,000,000 bu. a year ago. Current supplies of oats top 362,000,000 bu., while 135,000,000 bu. of barley are now in Dominion storage bins. Weekly exports of bacon and pork products are now equal to the annual exports of ten years ago.

WHEAT FROM CANADA

By the end of next week it may be clear whether wheat needed to feed livestock is to come from U. S. stocks or, at comparable prices, from Australia and Canada.

With an increasingly tight feed situation threatened, U. S. Commodity Credit Corp. will take ownership of 50,000,000 bu. on Apr. 30 in default of loans granted farmers on the 1942 crop. At the same time, negotiations for the purchase of 25,000,000 bu. of Canadian wheat are reported, with permission likely for the export without license of up to 300,000,000 bu.

Policy makers are being squeezed by midwestern farmers' antipathy toward imports, overflowing Canadian granaries, empty ships returning from the South Pacific, and the bargaining weight of U. S. wheat in postwar negotiations.

WATERWAY SHORTCUT



On Apr. 28, six 225-ton diesel-powered boats of the Davie Transportation Co. will open what is expected to be a banner year on the seven-year-old New York-St. Lawrence river-canal-lake route. D. F. Young, Inc., shipping agent, reports 130 round trips in 1942 compared with a prewar top of 40, primarily due to dangers of Atlantic sailings. Already three-quarters booked, the line is confident last year's record will be topped in 1943.



FIRE

....and the nearest Fire Department is 1,500 miles away!

Maybe the fire strikes a tropical air base. Or perhaps it happens in an arctic outpost of our armed forces. Wherever those fires flare up... whenever they do... they are quickly and decisively conquered when duGas dry chemical fire-fighting equipment is used.

On both fighting fronts and production fronts fire takes a fast knock-out when duGas gets to work. For duGas dry chemical re-

leases huge volumes of fire-smothering gases that stop combustion fast. And duGas dry chemical is always ready for action... no matter how torrid or frigid the climate.

Right now, our full-time job is manufacturing duGas fire-fighting equipment for our armed forces and America's vital war industries. After Victory, duGas fire-fighting equipment will again be available to all.

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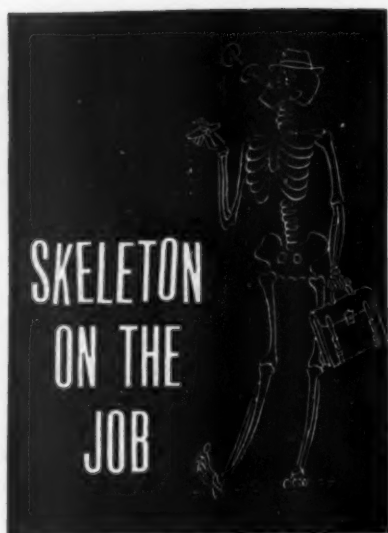


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Yet it's cheap measured in terms of the investment it protects . . . the years of investment in trade goodwill.

Right? Then how much more important to protect your much larger investment in consumer goodwill.

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PRODUCTION

Battlefield Sleuths

Looking for trouble is the job of the armament makers' technical observers who share rigors of war with soldiers.

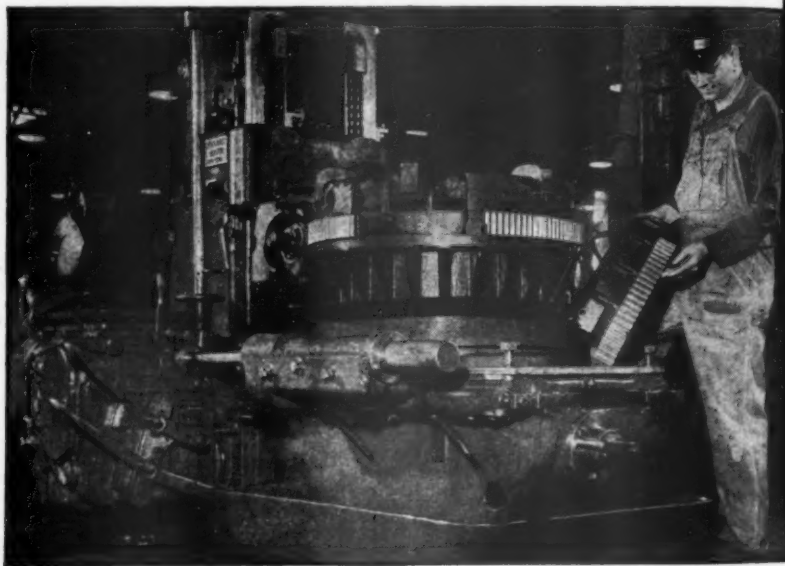
Wherever a battlefield exists today, a civilian expert from an American company is likely to be in the vicinity. The presence of such men is a new development in wars, one made necessary by the vast amount of mechanical equipment in use.

• **Teach Repairs**—These civilians are Jacks-of-all-trades. They teach maintenance men how to repair a job. They photograph the work being done, to show the home office how hard it may be to reach a certain part needing repair. They write long and necessarily thorough reports to their companies about the performance of the equipment in the field.

Estimates are that there are some 300 men working abroad in this manner. Stationed at camps within the United States are at least another thousand. They have to keep out of the way, to do their job.

• **When Trouble Starts**—The need for them is usually first realized when a service branch notifies the producer of an armored car, or an aircraft engine, or a gun carriage that field problems are being experienced with the equipment. Maintenance is difficult, perhaps, or replacement parts don't fit, or rough work has produced defects, or reassembly runs into snags.

The company is apt to counter with an offer to send a civilian observer to survey the problem and provide an on-the-spot answer or flash word back to the factory to make necessary changes. • **Lots of Volunteers**—All companies undertaking such programs have more volunteers than jobs. The man selected for the job preferably is of age to stand the rigors of climate and war-zone travel. He should have foreign experience.



BOOMERANG

Still bearing Teutonic legends on its gear-change lever plate (right), a made-in-Germany gear-hobbing machine is doing important work at the Caterpillar Tractor plant. Marketed before the war, by Schuehardt & Schutte, New York, the machine was bought in a used equipment mart when Caterpillar was unable to obtain a new one to hob teeth on the traverse arcs of 155mm. howitzers.





AMERICA'S WAR PRODUCTION DEPENDS ON TANKS LIKE THESE

Take a good look at the huge spherical tanks. They are where butadiene, an important ingredient of synthetic rubber, is stored.

Synthetic rubber is now being produced in steadily increasing tonnages. But there is not yet enough for civilian purposes. Before synthetic rubber can be used for such things as civilian tires, there are hundreds of ways it must be used for war production. After the needs of the Armed Forces have been met, synthetic rubber must first and foremost go into belts and hose, packings, mountings, scores of products essential to keep America's war production line moving.

United States Rubber Company is operating one of the first and largest synthetic rubber plants built under the Government program. A second will soon be in production.

We have worked in the field of synthetic rubber since 1921 and have used it commercially since 1931. We use all five basic types of synthetic rubber...buna-S, buna-N, neoprene, butyl and Thiokol...know which one to select for the performance required...and how to compound the specific synthetic rubber for the specific task. As the supply of synthetic rubber increases and its use becomes more widespread, this experience will be of growing importance to America's war industries.



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know language and customs and be an old hand at getting around.

The chosen technician is inoculated with the same serums used by the Army. He is advised to put his affairs in order for any eventuality, although no civilian technician has yet been lost on one of these missions. His company writes some extra insurance on him, ranging from \$10,000 to \$25,000 in most cases. Usually he is given extra pay; in some cases he is tendered a per diem sum for expenses and bonus. He wears a uniform like that of a war correspondent with an arm band labeled "T. O." for Technical Observer. He may be anything from an obscure factory foreman

with know-how up to a chief engineer.

• **Air Travel Preferred**—The average T. O. checks in at his starting point with but a few hours' notice. Usually he flies in Army ships to his destination; companies prefer that means of travel as the safest. Travel on troopship convoy is nothing unusual, however. Earlier this year the representative of one big company traveled with a convoy, for a very simple reason—some trouble was being experienced unloading his concern's bulky equipment. En route he trained an Army unloading crew; at the debarkation point everything went smoothly, and the technician turned around and came home.

Once abroad, such men are on their own. They can do and go as they please; necessarily their companies impose complete trust in them. They are under the same censorship restrictions as soldiers in the field.

• **Battlefields Simulated**—The work of these T. O.'s on the battlefronts is the dramatic side, but the domestic end is equally important. Terrain in the United States roughly duplicates that of world battle areas, and it is so used, not only by the services but also by the companies. They station men with troop units on both seacoasts, in the western deserts and the Rocky Mountains, and in all the proving camps.

Time is a smaller factor in traveling to these camps, so top executives of arms companies often turn up at them to see how their equipment stands up. The president of a large company passed three days recently riding in a medium tank in the California desert. The bumping, cramped trip, as severe as any taken by a Libyan tank crew, left the middle-aged president lame for days.

Chemistry at War

Detroit meeting points up significance of new developments in production of TNT, rubber, and the antimalarials.

Chemistry is working overtime to win the war. That was evident at the annual meeting of the American Chemical Society last week in Detroit, where subject matter all had a wartime slant, concerned as much with announcement of new products and better ways of making them as with subtle refinements in laboratory techniques.

• **Process Shifted to TNT**—The process known as hydroforming, for example, was developed by the oil companies to make high-test gasoline. Now, however, it is used as a means of producing synthetic toluene for TNT.

E. V. Murphree, Standard Oil Development Co., revealed that the first commercial plant for this purpose has been operating for some time, producing toluene at a rate equal to about twice that of the entire coal tar industry, averting what might have been a "very serious position." Additional plants have been set up; use of the process for aviation gas is expected to be widespread in the future.

• **Antimalarials Are Improved**—Developments of rare significance in medicine, rumored over the past several months, were indicated at the meeting. For the most part, they concerned research that may before too long make malaria as rare a disease as smallpox now is in this country. Progress on atabrine (BW—Mar.14'42,p66) and plasmoquin, both

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quinine substitutes, were described; there were hints that improvements were close at hand.

Present atabrine production, reported A. E. Sherrdel of Winthrop Chemical Co., Inc., far exceeds the rate of 800,000,000 tablets yearly, sufficient for 53,000,000 cases, announced last December; the production goal is twice the present output.

• **Sulfa and the Antimalarials**—At Pennsylvania State College, a group is trying to simplify the structure of the atabrine molecule, obtaining active drugs belonging to the same family to which sulfapyridine and niacin belong. Dr. L. T. Coggeshall of the University of Michigan reported an "exciting" lead in the discovery that sulfa drugs would eradicate infections related to malaria in a rhesus monkey.

Discussion in corridors brought out the report that Dow Chemical Co. and other concerns appear to be close to development of antimalaria prophylactics and were working on anti-influenza pharmaceuticals as well.

• **Substitutes for Tapioca**—H. H. Schopmeyer, G. E. Felton, and C. L. Ford of American Maize-Products Co., Roby, Ind., said starch made from "waxy maize" can be used in place of tapioca, both in industrial adhesives and in foods.

Lactic acid, known generally only as a chemical found in sour milk, can be dehydrated and polymerized to form resins, reported Earle O. Whittier of the Dept. of Agriculture. The product is usable for lacquers and protective coatings for metal containers, such as milk cans, and for those used to can evaporated milk, vegetables, and similar products. It may also be used as a glue in laminating wood and paper.

• **Livestock Proteins**—A means of meeting livestock feed requirements was set forth by J. C. Bauernfeind, J. C. Garay, Werner Baumgarten, Leonard Stone, and C. S. Boruff of Hiram Walker & Sons. The solution is simple: Utilize dried distillery byproducts, piling up today in increasing amounts due to demands for ethyl alcohol for war.

Distillers' dried grains were said to be of lower quality than standard protein feeds, but it was also pointed out that cattle do not require the standards now furnished them. Transition to use of corn distillers' dried solubles and dried grains by cattle growers was recommended, therefore, to release various oil meals for feeding of poultry and swine.

• **Titanium Handling Improved**—Solution of a 20-year-old chemical problem in manufacture of pigment for white paint was announced by Arthur W. Hixson of Columbia University. His paper pointed to growing use of titanium oxide in place of white lead. However, control of reactions during the process was not thorough, requir-

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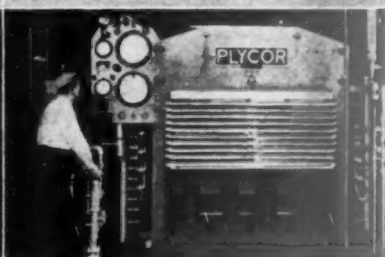
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NORTH CAROLINA

ing much trial and error work. Now, he said, a new means permits manufacturers to select the proper hydrolysis condition and thus control the process adequately.

It was said that the weight of titanium pigment is so much lower than white lead that its use in paint for battleships has enabled the armament designer to increase the weight of guns.

• **Polymerization Secret**—Rubber chemists heard with interest a new theory that indicates improved methods of producing synthetic rubber. C. F. Fryling of Goodrich expressed belief that polymerization—the chaining of molecules in synthetic rubbers and other products—actually begins in the water mass in which molecules are suspended, not on the interfaces of the molecules themselves. If proved, this theory will go a long way toward understanding mysteries of the polymerization process, leading to greater control over it.

Plastic Punch

Substitute for die metals seen in California plant's use of thermoplastics for forming light metals.

A hulking crane-truck pulled into the Burbank (Calif.) plant of the Plastalloy Co. the other afternoon with the big 14,000-lb. metal female unit of a die for forming an important section of a war plane's aluminum-alloy "skin." With it came a rush order for casting a new plastic forming punch to fit. Next morning the punch was ready for immediate installation and operation in a drop hammer. A threatened production stoppage had been licked before it happened.

• **Yields Under Hammer**—Overnight, the plant's small force had cast the punch out of Plastalloy, one of the tough new plastics developed for such purposes, using the female part as a mold. Actually most of the night hours had been used for cooling after casting. No allowance had to be made for the thickness of the aluminum it was to form. Since the material has the consistency of hard rubber and some of the resiliency of soft rubber, it gives a little as a hammer drops, providing adequate clearance for the thin metal sheet.

Patents are pending on Plastalloy, a mixture of two undisclosed thermoplastic materials. It weighs only 68 lb. to the cubic foot, less than one-tenth the weight of lead and about one-sixth that of Kirksite, a zinc alloy (BW—Nov. 7 '42, p. 76), the two die metals which it seeks to replace. It does not oxidize, can be stored indefinitely between runs.

• **Material Easily Fabricated**—If designs are changed, the plastic can be recast into new dies. Though the punch that

NOW—AND LATER

Last fall du Pont perfected tapered nylon bristles to be used in paint brushes in place of the natural bristles of Asiatic hogs (BW—Nov. 7'42, p73). This month the first full-scale plant went into operation, its entire output earmarked for war industry and the armed forces. The process by which the nylon plastic is tapered remains a closely guarded secret.

Likewise secret are plans for men's suits of nylon cloth, reportedly now being readied for the postwar market. Coats will be practically wrinkleproof; trousers will have permanent, molded-in creases.

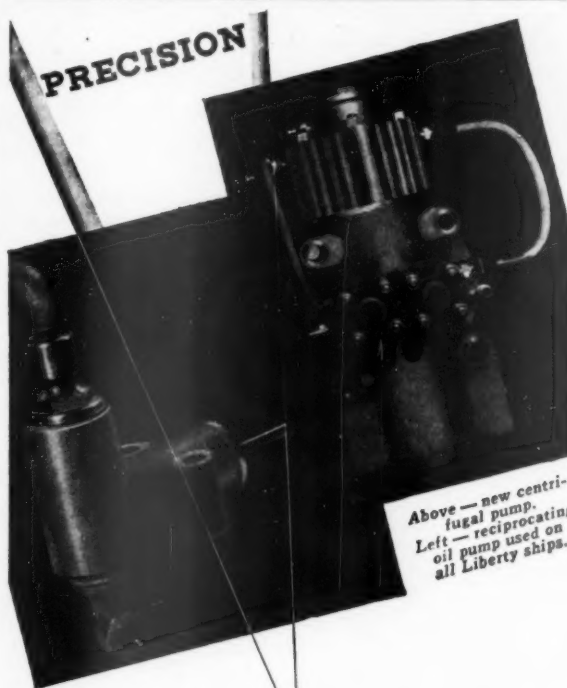
was rushed out overnight required no scraping to fit it with its mating part and will stand up under thousands of drop-hammer blows, the material can be fabricated, when necessary, with almost any wood-working tools except saws and sanders. Such tools generate a good bit of heat when going through any thermoplastic material, tend to become clogged and refuse to cut.

JEWELERS LOSE AGAIN

Jewelers, to whom the platinum substitute, palladium, was the only bright spot in a rapidly tarnishing future (BW—Apr. 17'43, p62), last week just about gave up hope of capitalizing their excellent sales opportunities when WPB cut use of both gold and palladium to 75% of 1941 consumption till June 30, 50% thereafter. Jewelers contend that the order (L-45) will in effect cut production to a third of last year's record high.

They protest that neither gold nor palladium is a critical metal. WPB admits this but says restrictions are intended to release plant facilities and workers for war production. The industry, concentrated around New York, the blighted area of the war boom where unemployment is still an item of concern, finds no solace in this explanation.

The point on which trade resentment reaches the melting point is the palladium quota which they say is zero. Since platinum was still available in 1941, virtually no palladium was used for jewelry. Only margin given the industry is a provision under which they may substitute gold or palladium for a percentage (16 2/3% and 6 2/3% per quarter respectively) of previous platinum consumption. Since this allowance is couched in terms of weight, and palladium weighs only 60% as much as platinum, manufacturers will be allowed palladium in an amount equal to almost one-half the volume of their platinum consumption in 1941.



Above — new centrifugal pump.
Left — reciprocating oil pump used on all Liberty ships.

TOLERANCE $\pm .0005$

PRECISION CARRIED TO THE POINT OF PERFECTION IN *Kirsten* - MADE PUMPS

The two pumps illustrated above are proud examples of the type of close tolerance machine jobs we turn out at Kirsten Pipe Co.

Our own engineering staff...the right tools operated by highly-skilled men and women...designers ready to create a needed tool for any type of precision job...our own non-ferrous foundry...these are the ideal conditions that make outstanding performance a regular rule.

Beating deadlines is our specialty, too. We are glad to take on a tough production schedule. Jobs—like these pumps—can be completely handled in our plant from plans to delivery.

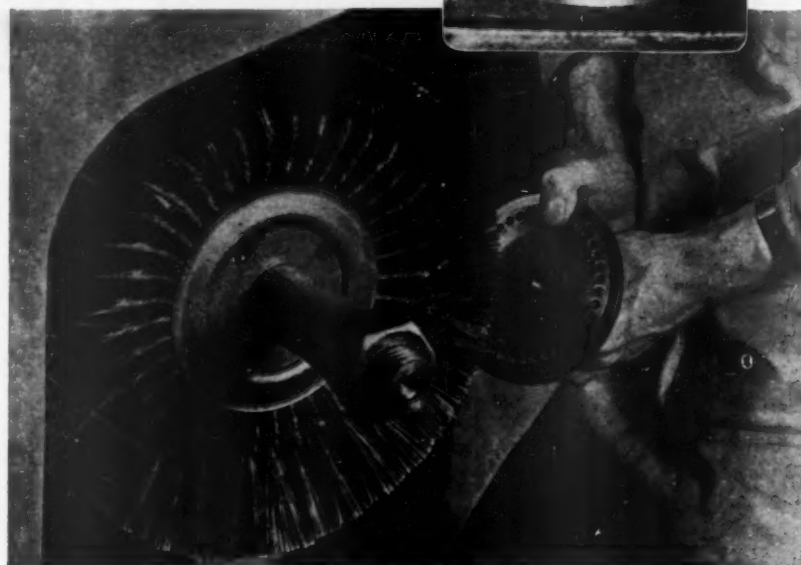
This is the kind of job we can do for you. We can deliver non-ferrous castings and precision-machined products of the closest tolerance in record time. Let's discuss your machine problem. Write or wire.

KIRSTEN PIPE COMPANY
3129 WESTERN AVE. • SEATTLE, WASHINGTON

★ FOR THE DURATION:
Manufacturers of precision machinery for war production



*It levels the hills
around craters of steel*



THEY'RE urgently needed, these circular plates with the 30-odd holes. By the tens of thousands they're going into a certain war-essential product.

But notice in the magnified view above, the ragged burrs that border each hole when the piece comes from the punch press. It was important to remove those burrs, and break the corners.

An Osborn Brushing Specialist recommended the Osborn Brushing Wheel shown above, to be used with a simple holder for the plate. The brushing action of the wheel revolves the plate on its shaft and every trace of burr is removed from all the holes in less time than it takes to tell about it. (See lower magnified view.)

This is another example of how Osborn Brushing Wheels are speeding production and improving quality in war work. Removing burrs, breaking corners, forming radii, eliminating scratches, tool marks, and other imperfections from highly-stressed parts, preparing metal for welding, and cleaning the bead afterwards . . . these are the jobs for Osborn Brushing Wheels, the jobs they do faster, better, and at lower cost.

There's an Osborn Brushing Specialist in your area ready to help war plants with war-production problems. Reach him through *The Osborn Manufacturing Company, 5401 Hamilton Avenue, Cleveland, Ohio.*

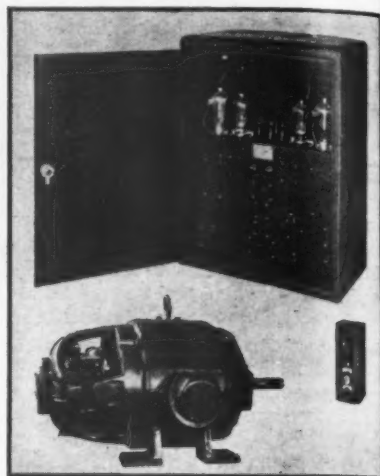
WORLD'S LARGEST MANUFACTURER OF BRUSHES FOR INDUSTRY



NEW PRODUCTS

Electronic Drive

Because most a.c. motors are built for a single designated speed, and most industrial plants are supplied only with a.c. power, manufacturers use various expedients to secure variable speeds when needed. These can take many forms ranging from step-cone pulleys and variable speed gears on machine tools and other equipment to elaborate installa-



tions of various types for converting a.c. to d.c., permitting use of d.c. motors.

Newest method of changing speeds is electronic, wherein thyatron tubes take just as much a.c. power as is needed for a given speed and convert it for a d.c. motor. Newest outfit of the type is the Mot-O-Trol Electronic Adjustable-Speed Drive, just announced by Westinghouse Electric & Mfg. Co., East Pittsburgh. Stripped of technicalities, it consists of a cabinet which looks something like a radio, a switch, and a shunt-wound d.c. motor. You set a radio-like dial to the speed desired and flip the switch. A standard drive is available for ratings up to 1 hp. and a speed range of 1 to 20; more powerful drives can be designed to special order, with wider speed ranges.

"Ever-Drest"

Several claims are made by the Wolfe-Kote Co., Sheboygan, Wis., for its new Ever-Drest. It is a nontoxic, nonirritating white powder to be added to the water used in wet-grinding operations. It promises to prevent carbonization of grinding wheels, to keep them "open," to prolong their lives, and to promote high grinding efficiency.

Inspection Marker

One of the aircraft parts manufacturers decided to mark each of certain critical items in such a way that a glance

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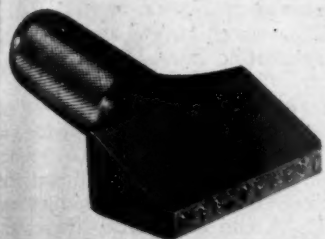
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ould reveal its complete history through sequence of manufacturing operations and inspection. To do the job simply, New Method Steel Stamps, Inc., Jos. Campau St., Detroit, designed its new Operations Sequence Marker.

It is a steel stamp carrying a series of consecutive numbers, to be stamped on an item at a single whack as it starts



through production. Each number represents an operation. After each operation, the inspector stamps his personal symbol—beneath the operation number if O. K., above it if N.G. If the part is subsequently salvaged by reworking, he stamps his approval beneath.

Regalvanizer

When galvanized materials are joined by welding, the zinc coating is dissipated by heat and must be replaced if the joint is to be protected against rust and corrosion. For such replacements, Galv-Weld, Inc., Mutual Home Bldg., Dayton, Ohio, brought out a zinc-bearing metal stick which can be rubbed on the weld while it is hot, depositing a new zinc coating (BW—Sep. 27 '41, p. 55). Subsequently, the Alloy Sprayer Co., Book



Bldg., Detroit, brought out its device for melting and spraying metals (BW—Aug. 29 '42, p. 55).

Now, under the stress of war production, it is found that the combination of Galv-Weld and Alloy Sprayer is a natural, resulting in considerably increased speed and economy in regalvanizing. Operations are broken up. Instead of a high-priced welder's taking his time to rub on the metal, as is still expedient in custom welding, he passes the job along to a lower-priced worker equipped with a spray gun.

Business Week • April 24, 1943

CONTROL



Control...
the Critical Factor
in PT Boat
or Steel Casting

THE sea veterans are telling the story now... the story of grim days in the Pacific after Pearl Harbor. And they're singing the praises of the PT boats... the expendable little "ocean mosquitoes" that proved they could sting like wasps. Greater maneuverability... which is military talk for control... gave the PT boats the edge in tight spots.

Modern war is control... control of men and equipment on production line as well as battle line. The Lebanon Steel Foundry... makers of steel castings for the armed forces... emphasizes control as the critical factor in production.

Final controls at Lebanon are the series of tests which all Circle ① Castings must pass before they are shipped. The illustration shows the conducting of a Charpy impact test on a test specimen.

It's *quality through control* that makes Circle ① Steel Castings the choice of such discriminating companies as Glenn L. Martin and American Machine & Foundry.

LEBANON STEEL FOUNDRY, LEBANON, PENNSYLVANIA

ORIGINAL AMERICAN LICENSEE GEORGE FISCHER (SWISS CHAMOTTE) METHOD

LEBANON



Stainless and Special Alloy
STEEL CASTINGS



FIGURES ARE WEAPONS, TOO!

Today the Allied Nations' batteries of MARCHANT Calculators are the artillery of figure production... always firing the needed answers with greatest accuracy, speed and silence.

**SPEED-
ACCURACY-
and EASE OF
OPERATION**



Sale subject to
priority restrictions

MARCHANT
Silent Speed CALCULATORS

MARCHANT CALCULATING MACHINE COMPANY
Home Office: Oakland, California, U. S. A.
Sales Agencies and Manufacturers' Service Stations
In All Principal Cities Give Service Everywhere

MARKETING

Dealers Survive

Survey shows 82% of auto men still in business, but July may force a new-car show-down with RFC.

Of every five auto and truck dealers in business when the war began, four still have their franchises. Moreover, the surviving 82% are those who were responsible for an estimated 95% of the industry's retail dollar volume in normal times.

• **Smallest Since Twenties**—A compilation by the trade magazine, *Automotive and Aviation Industries*, reports 33,250 dealers operating as of Mar. 1 compared with 40,537 on Jan. 1, 1942.

Industry sources figure that urban dealerships have been reduced in greater proportion than rural ones; the latter seem better able to survive on service business. They also believe dealer organizations of smaller companies have shrunk in greater proportion than those of the big concerns.

• **Few Bankruptcies**—Few of the suspended dealerships went into bankruptcy. Closings came generally to con-

serve capital, to merge with other agencies, or to permit the owner's entry into the services. Those who survived did it by belt-tightening—by cutting out over-heavy used car allowances and wasteful service operations.

It is apparent that the first 17 months of war have seen far less impairment of the distributing framework of the auto industry than was gloomily expected. Most Detroit opinion, further, is that the worst of the storm is over for the dealers unless the war drags out interminably. This viewpoint is that the weak outlets closed in 1942, that survivors will hold their place without distress another year or two.

• **End of the Gamble**—No hard and fast predictions can be made on this score, however, until after July, when the Reconstruction Finance Corp. will take up cars offered by dealers who have borrowed on them from that federal agency. This will mark the beginning of the end of the good gamble it has been for a dealer to stay in business—a gamble made more advantageous by the General Motors guarantee of preferential rights on new cars to continuing dealerships and by the promises of most companies to buy back any cars the dealers wanted to return.

Those who stick it out expect to be



FISHERMEN'S LUCK

In this year of meat rationing, the art of fishing takes on new importance. From Seattle (above) and other northern Pacific Coast ports sailed unmanned halibut fleets this week for what is expected to be the biggest season on record. Most vessels have signed on green hands to offset crew shortages, but the Seattle Fishing Ves-

sel Owners' Assn. has little doubt that the 1943 halibut quota of 50,500,000 lb., 1,000,000 lb. more than last year, will be met. Meanwhile, on the Atlantic Coast, fishermen off New Jersey are snaring record hauls of regular summer fish plus mammoth lobsters. And within a few weeks, when the mackerel really start to run, the tonnage figures should skyrocket. Fishermen predict a banner season.

CAN IT BE THAT
GLASS
IS TOO TRANSPARENT?



MAYBE SO, MAYBE SO. It is a fact that everybody looks *through* glass. You always have and you always will. Perhaps because it is so transparent, you've really never stopped to think about its other properties.

Now we ask you to look at the properties of glass . . . a good, long look . . . a look with your imagination.

You discover one of the most versatile materials in the world. These sparkling sheets we make have many amazing qualities, in addition to transparency, which make glass a better material for scores of everyday uses.

Chemically, glass is the most stable of all materials excepting the noble metals. It will not rot, oxidize, or disintegrate.

Dimensionally, glass is more stable, too. It keeps its shape. The coefficient of expansion is lower than practically any other material.

The surface of glass is among the hardest in the world. It is nonporous; will not absorb odors or moisture. It is more acid-resistant than any structural material. It offers unusual resistance to abrasion. It can be coated, polished, or etched. In large sheets, it can be made smoother than any other material. Its weathering qualities are unequalled.

Glass is *strong*. Make no mistake on that point. A square foot, quarter-inch sheet, the way we temper it, will withstand a pressure of 60 pounds per square inch. Double the thickness and you quadruple the strength. Our tempered glass has a modulus of rupture of 30,000 pounds per square inch, and it will withstand a thermal shock of 400 degrees Fahrenheit. Actually, tempered glass is stronger than many metals.

There are many more unusual physical and chemical properties of glass . . . properties found in combination in no other material. L·O·F can help you sort them out, team them up, practically any way you want. You can have the final product in flat sheets or bent shapes, laminated or fabricated with another material. You can have it in multiple units, or with metal or plastic collar.

Won't you write us about any possible use of glass that may appeal to you, no matter how revolutionary or unusual? That's the way to really find out. Libbey-Owens-Ford Glass Company, 343 Nicholas Bldg., Toledo, Ohio.



LIBBEY·OWENS·FORD

A GREAT NAME IN *Glass*

Destructible?
Wood-Metal-Plastic-Glass. No material is indestructible. However, barring unseen conditions, no material will fail on a job in which it has been properly specified and engineered. When our application engineers say "Yes", you can be sure about glass.



What happens next?

THE instant the plane hits the water a tiny release mechanism goes into action . . . automatically. Out of the plane pops a rubber life raft.

Even before the pilot can extricate himself from the cockpit his life raft, fully inflated, is floating near the plane. It is connected to the plane by a short line. If the plane should sink, the fastening breaks and the raft frees itself.

* * *

The pilot pulls a release-cord. Instantly, his "Mae West" life preserver is inflated by carbon dioxide. He doesn't have to do a thing more . . . but climb into the raft. All the work is done by release mechanisms, valves, and cylinders of carbon dioxide.

* * *

Raft-inflation equipment is only one of the many interesting wartime life-saving devices developed by Walter Kidde & Company, a pioneer in the field of compressible gases. Cylinders for oxygen and other gases . . . fire-fighting equipment . . . carbon dioxide power-actuation apparatus . . . all protect the lives of our fighting men.

Thanks to increased production, Kidde cylinders are now available for immediate delivery. Kidde research engineers are constantly developing new uses for pressure gases. Perhaps you have a problem they can solve. For information, write: Walter Kidde & Company, Inc., 421 Main Street, Belleville, N. J.



This Kidde inflation cylinder for rubber rafts has helped save many lives.



in a good position to bargain with their factories. They have seen weak but annoying competition fade; they will want to continue their dominating position. This aim will characterize postwar franchise negotiations.

• **Outlet Race**—The dealer weapon at that time will be competitive courtship. Dealer and industry sources alike expect the end of the war to start a no-holds-barred race for outlets. The first companies to have cars in the field will have an immense advantage. Competitors lagging in the production sweepstakes will have the alternative advantages of offering exclusivity and other interesting contract clauses as a lure to prospective dealers.

This franchise situation looms as a problem of magnitude for any newcomers to the business—the Kaisers, Girdlers, et al. They will have only new names to offer, untested in the peculiar ramifications of the auto business, however well studied they may be with wartime output accomplishments. New names will attract new dealer capital. But old dealer capital can be expected to stay with the established names. And the value of that old dealer capital is best attested to by the fact that it will be the first sought by the field organizations of the auto companies the day the war ends.

OPA Eyes Cafes

Fearing public reaction to runaway meal prices, agency considers ceilings and orders menus to be filed.

Washington is still seeking some workable way to regulate the complicated restaurant business. What with rationing and greater patronage by war workers, sales of eating and drinking establishments are expected to tally at least \$7,200,000,000 this year, up 24% from 1942. Fearing public anger over the fact that this boom is unaccompanied by price ceilings or protection of quality, OPA is thinking about slapping ceilings on prices and indirectly freezing the contents of menus.

• **FDA Scheme to Die**—With OPA attempting to regulate the nation's 300,000-odd eating establishments, the Dept. of Agriculture probably will allow a scheme of its own to drift into limbo. The department's Food Distribution Administration decided about a month ago to defrill restaurant meals so that, under rationing, the restaurant patron would have no advantage over the person who dines at home (BW—Mar. 6 '43, p58). But now the shortage of most foods is automatically doing the defrilling job. Much more important are the problems of controlling prices and, at

the same time, trying to keep menus from growing too skimpy.

OPA got its cue to step in from the President's hold-the-line anti-inflation order, plus the Bureau of Labor Statistics' recent experiments to add restaurant prices to the cost-of-living index. Under General Order No. 50, issued by OPA a few days after the President's order, restaurants have been directed to file copies of their menus and wine lists for the week of Apr. 4-10. They must also keep files of all their menus hereafter, subject to examination by OPA. Wherever prices are out of line, or the size of meals shrinks too much, OPA regional, district, or state officers are empowered to impose ceilings.

• **Areas to Watch**—So far no local ceilings have been posted, most likely because OPA's regional officers are puzzled over methods and want the main OPA offices to devise a formula. Restaurants in the Midwest and Northeast, however, stand the best chances of regulation. OPA believes that prices are much too high in these areas, that they must be brought down either voluntarily or by formal order.

For their part, the restaurateurs have done surprisingly little complaining over the proposed ceilings. Some proprietors philosophically hold the view that prices can't go up forever without crimping the present boom. Others think that maybe ceilings on restaurant prices will cause OPA to pay more attention to the crumbling wholesale ceilings on vegetables, poultry, and fish. For OPA knows perfectly well that restaurants can't hold their prices if raw material costs get out of line.

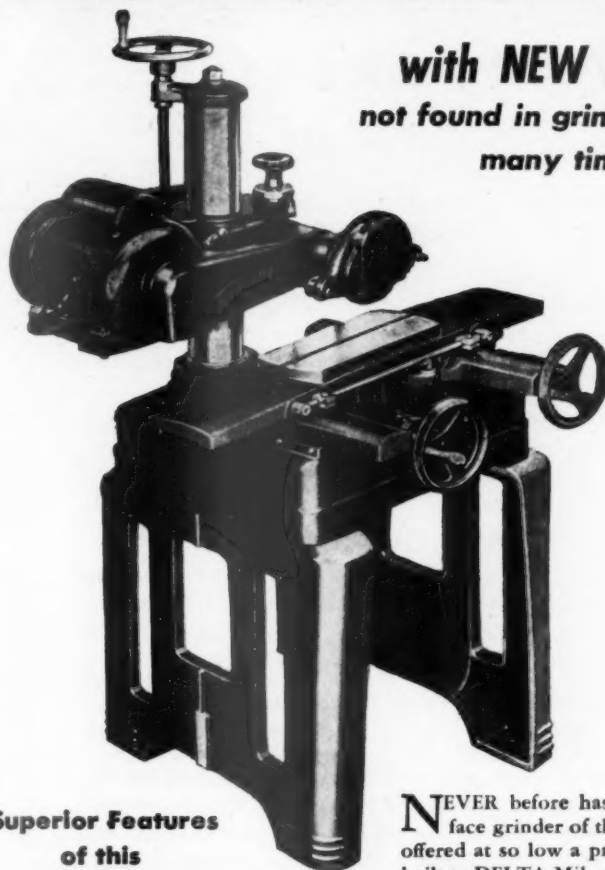
• **Enforcement Drives Started**—As a matter of fact, OPA's conscience is already plagued by this situation. Several regulations have lately been put in the mill to control the heretofore uncontrolled prices of fish. And the wholesale ceilings on poultry—which didn't work too well because of black markets—are being revamped, while OPA attorneys are starting enforcement drives against black markets on both coasts and in Texas.

After the wholesale price matters are cleared up, OPA wants to sit down with the restaurant people and thresh out some method of holding down prices while maintaining quality. To this end, the major restaurant trade associations have been asked to suggest an advisory committee with which OPA is to consult.

• **Advertising Urged**—In the interim, the National Restaurant Assn. is urging its members to pay more attention to their public relations. Advertising campaigns—such as the Stouffer chain has been running to explain fewer frills and less service—are suggested as one answer. More campaigns of this nature probably will blossom out during national restaurant week (May 3-9).

New Low-Cost SURFACE GRINDER

with **NEW FEATURES**
not found in grinders costing
many times as much



Superior Features of this

TOOLMAKER SURFACE GRINDER

Improved, Well-Designed Spindle—Forward bearing is large surface taper bronze bearing of design usually found only in much more expensive grinders—rear bearing is sealed-for-life ball bearing.

Special Wheel Mounting System—utilizes two-piece adapter so that either wheel, or wheel and adapter, can be removed. Thus once wheel has been trued up, wheel and adapter can be removed and replaced without need of re-dressing wheel.

Improved Table—Smooth operating, with conveniently located control handles—has long ways so that table rides solidly. Micrometer collar, with wide graduations on the traverse adjustment, permits accurate settings. The table is provided with T-slot for clamping fixtures or magnetic chuck in place.

Specially Designed Column—of one-piece construction, cast of high-tensile iron. Entire column together with bracket, can be rotated 360°. Has many other unusual features.

NEVER before has there been a surface grinder of this type and quality offered at so low a price. Designed and built to DELTA-Milwaukee standards—it is husky, accurate, versatile, easy to operate, portable—and incorporates many advantages not found in machines costing many times as much. It is ideal for surface grinding, tool sharpening and any grinding operations within its range—and because of its low cost and portability, can be quickly swung into any spot to free machines costing ten times as much.

Send for Catalog

giving full details and prices on the new Delta Surface Grinder—and also showing full line of Delta drill presses, band saws, abrasive finishing machines and other Delta low-cost machine tools. Get in touch with nearest Delta Industrial Distributor or send coupon below.



THE ARMY-NAVY "E"—awarded for excellence in the production of machine tools vitally needed in the war effort.



The Delta Manufacturing Company
999 E. Vienna Ave., Milwaukee, Wis.

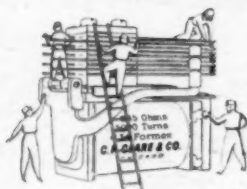
Gentlemen: Please send me your new catalog giving full details and prices on the Delta Surface Grinder, and your full line of low-cost machine tools.

Name.....

Address.....

City.....State.....

PROGRESS Is the Law of Life



Without progress, there can be no vitality of life—in an individual or a business. For life advances to the future, or recedes into the past. There is no point of immobility.

This comparatively young company, inspired from its beginning by the trend of modern ideas, has developed a product which symbolizes progress. The Clare "Custom-Built" Relay was specifically designed to avoid the rigidity of application inherent in ordinary telephone-type relays. The basic idea of "custom-building" a relay means the inclusion of unusual, new, and continually changing features essential to the growing demands of modern industrial designing.

Today industrial designers are utilizing to the full their rapidly increasing knowledge of scientific principles, with constant reliance on the skill of Clare engineers to "custom-build" relays to meet their varying purposes.

And Clare "Custom-Built" Relays are keeping step with the progress of today, and will be ready for the developments of tomorrow.

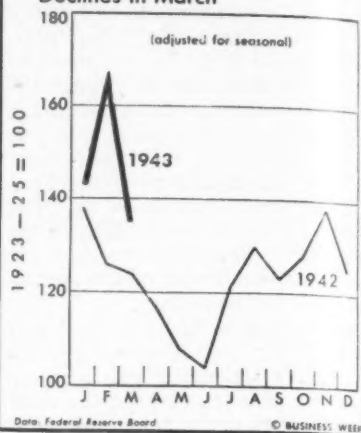
Let our engineers help you solve your designing problems by "custom-building" the relay that meets your specific requirements. Ask for the Clare catalog and data book. C. P. Clare & Co., 4719 Sunnyside Avenue, Chicago, Illinois. Sales engineers in all principal cities. Cable address: CLARELAY.



CLARE RELAYS

"Custom-Built" Multiple Contact Relays for Electrical,
Electronic and Industrial Use

BUYING SPREE ENDS Department Store Sales Volume Declines in March



Postwar Cooling

Refrigerator makers see market saturation within three years after peace, so they are looking for new sales appeal.

The refrigerator industry is lifting its sights to a postwar world in which transparent plastics afford ready appraisal of the food compartments, in which aluminum paneling makes the boxes less cumbersome, and in which every kitchen will have its own food locker and storage space in one unit.

• **Market Narrowing**—The war strangled the industry at a time when the market was beginning to narrow. There were 26,000,000 metered homes and 18,000,000 iceless refrigerators in use. The 65% saturation worried the producers; they were keenly cognizant of the leveling of sales of washing machines when the 75% mark was reached.

Of the 18,000,000 boxes in use, about 6,500,000 are eight years old or older; that is the age when mechanical difficulties significantly stimulate interest in trading. If the war continues another two years, the eight-year-and-older group will have enlarged to at least 9,000,000.

• **Three Years' Production**—But even optimists figure there can be in sight after the war no more than about 7,000,000 sales of refrigerators as they are now built—three years' production. That accounts for the extracurricular thinking on how to improve the product.

Some refrigerator company executives have been looking into the merit of merchandising a combined refrigerator-cold storage locker. The ration-induced locker consciousness of the nation (BW—Feb. 27 '43, p17) carries a moral for the refrigerator makers.

• **Three Sections**—There is the nebulous conception, therefore, of a refriger-

that might be divided into as many as three sections. One would be the orthodox food storage and ice cube compartment. The second would chill down to perhaps 10 F. for storage of frozen meats and foods. The third could go well below zero range for quick freezing.

Such a unit would be for a medium large home; cottage kitchens couldn't accommodate it. Its market would thereby be considerably reduced, but it obviously offers highly interesting advantages in price and profit.

Plastic Windows—Refrigerators, regardless of the lower range cold adjuncts, are likely to boast postwar improvements. More plastic appears slated to be used, perhaps for visibility into most sections of the box.

At least one company is experimenting with aluminum as a paneling base for the walls. The aluminum could be electrolytically coated in white, the objective of both these innovations being to reduce weight. The company's big problem is to decide whether the advantages and sales points of lower weight will square with costs.

Postwar Competition—All the refrigerator makers are wondering what new postwar competition they may have to face and how strong it will be. The industry, like the auto industry, has more than a casual eye turned to the West. Trade circles report that Consolidated-Waltte Aircraft Corp. has used blind advertisements in eastern refrigerator-making cities seeking to hire refrigerator and other electrical appliance engineers. They think others, also, are interested in postwar invasion of their field.



**This is no time
to get rid of one's
bodyguard**

AS LONG as you drive a car you still need the protection insurance can give. Automobile mileage has been rationed, but driving hazards continue.

Today Hardware Mutuals offer *new, drastically lowered auto rates*—plus the opportunity for dividend savings that have averaged 20% of auto premiums paid since 1914. And you get the thorough protection assured by Hardware Mutuals *policy back of the policy*.

Be sure, too, that your home fire insurance is in line with today's increased property values. In towns having fire protection, the dividend savings to home owners on Hardware Mutuals full standard policies have never been less than 40%. Hence, if your property is under-insured, you

may be able to increase your coverage at no extra cost.

Hardware Mutuals *policy back of the policy*—our way of doing business—makes your interest our first consideration. Sound, efficient management and careful selection of risks have returned a total of over \$82,000,000 in dividend savings to policyholders.

Licensed in every state, with offices in principal cities, you receive 24-hour a day nation-wide claim service—deal directly with full-time representatives. And all Hardware Mutuals insurance is issued on a **NON-ASSESSABLE** basis.

FEDERATED HARDWARE MUTUALS
Hardware Dealers Mutual Fire Insurance Company, Home Office, Stevens Point, Wisconsin
Mutual Indemnity and Hardware Insurance Company, Home Office, Owatonna, Minnesota
HARDWARE MUTUAL CASUALTY COMPANY
Home Office, Stevens Point, Wisconsin



Hardware Mutuals

Stevens Point, Wis. • Owatonna, Minn.

Compensation, Automobile and other lines of

CASUALTY AND FIRE INSURANCE



EASY DOES IT

Suburbanites who have never been within hailing distance of a chicken coop are now getting familiar with them—thanks to meat shortages. Aimed at that market, Easi-Bild Patent Co., Pleasantville, N. Y., is promoting simple plans for a 10x10-ft hen house (above) or a 7x8-ft. hog house. The kits, costing 50¢ and 60¢, contain full-sized drawings, step-by-step procedure, and complete lists of needed materials.

AMAZING REMOVABLE STICKERS

SPEED PRODUCTION ELIMINATE ERRORS

Because they are applied without moistening, permanently adhere to any smooth surface, never fall off, yet are easily peeled off, these amazing stickers are used by practically every large war plant, placed directly on parts and fabrication as inspection, rejection, instruction stickers, etc. Send for catalog of uses and samples today.



GAR WOOD places Kum-Kleen stickers on hoists to carry service information.



BELL AIRCRAFT uses them as Progress Sheets, applies them to airplanes in production.



Hundreds of plants now use Kum-Kleen Pre-Cut Masking Stickers to slash masking time.



AVERY ADHESIVES, Dept. BW 24
415 E. Third St., Los Angeles, Calif.
In Canada: Enterprise Sales & Distributors, Toronto

On the Ration Point Battle Line

When rationing of processed foods arrived, frozen foods went into a sales slump, stocks piled up, and this week OPA slashed point values. Meanwhile Birds Eye had done a big job in educating consumers to the economy of frozen foods, for on the old

point values it had to demonstrate to consumers that they got as good a buy in frozen foods as in canned foods on a "take-home" basis and a considerably better value when the drained weight rather than the net weight was considered.

Product	Points per package	Frozen weight in ounces	Points per ounce	Points per can	Canned weight in ounces	Drained weight in ounces	Points per ounce drained weight
Cut corn (whole kernel)...	7	10	0.70	14	20	12½	1.10
Cut corn (vacuum pack)...	7	10	0.70	8	12	11	0.73
Peas.....	10	12	0.83	16	20	12	1.33
Lima beans.....	10	12	0.83	19	20	13	1.46
Green beans.....	7	10	0.70	14	19	11½	1.22
Peas and carrots.....	6	12	0.50	14	20	12½	1.12
Spinach.....	10	14	0.71	14	18	11	1.27
Mixed vegetables.....	6	12	0.50	14	20	14½	0.95
Peaches.....	13	16	0.81	16	20	13	1.23

Frosted Boon

Frozen food producers finally win big reduction in point values from OPA. Promotion work yields dividends.

In a sweeping and unprecedented action, OPA this week came to the relief of the frozen foods industry. It slashed point values, effective at once, by 50%. On all fruits and on asparagus, beans, corn, peas, and spinach, the cut was from an average of 13 points a pound to 6; on other vegetables the slash was from 8 points to 4. Four-points-a-pound was also established as the new level for frozen foods sold to the institutional trade—restaurants, hospitals, etc.

The reduction in point values was more of a boon to producers who supplied the institutional trade than to those who sold at retail, for extensive consumer promotion had done much to counteract the sales slump into which point rationing had plunged the industry.

● **Raided Fresh Foods**—During March, frugal consumers freely paid 45¢ for cauliflower and 25¢ a lb. for peas but clung to their ration points till the end of the month, then cashed them in on canned goods—to hoard.

Already retail sales of quick frosted foods are back to normal in some areas, still definitely lagging in others. Producers attribute the quick comeback largely to the fact that rationing has forced consumer attention on food values. New customers are making up for reduced consumption of old customers, and many housewives are learning for the first time portions per package and ounces per can.

● **Comparative Values**—The widespread assumption on the part of brand new users of Ration Book No. 2 that point values were higher for frosted than for canned foods (BW—Mar. 6'43, p8) had

been effectively contradicted by an intensive advertising campaign of the Birds Eye Frosted Foods Division of General Foods Corp.

Taking comparable products—most vegetables, for peaches are about the only fruit that could be competitive—the Birds Eye advertising sought to show the consumer that he got as good value point-wise in frozen foods as in canned goods on a net weight basis and a considerably better buy on a drained weight basis (table above). Thus, for example, he got 20 oz. of canned corn for 14 points and 10 oz. of frozen corn for 10 points—an even break all around.

● **Different Story**—When drained weight is taken as the standard of comparison the consumer got only 12½ oz. of canned corn for his 14 points, but he still got his 10 oz. of the frozen product for his 7 points because there is no waste liquid.

Despite the rapidity with which the industry has grown in the past ten years frozen foods still account for a small part of the nation's total food consumption—probably not more than 4%. Producers who have concentrated promotion on breaking the way for their new product now look to rationing to accomplish what they figure would have taken four years of sales engineering.

● **Vitamin Superiority**—Then too, the industry hopes that a more nutritious conscious nation will pay more attention to food research which shows produce, quick-frozen a few hours after harvesting, superior in vitamin content to "fresh" fruits and vegetables freighted from California to New York. Thanks to the critical labor situation, increased attention is being focused on the labor-saving feature of frozen foods.

All this, together with facilities expanded for military and lend-lease production (BW—Apr. 3'43, p19) and a backlog of new products which packers are withholding until they can launch them without the handicap of war, rationing or special price ceilings, indicates to the

AFRICA is host to U. S. troops..



American troops and assault boats land in North Africa.

AFRICA:

The world's second largest continent is so big that it could blanket the United States four times. Indeed, the famous Sahara Desert is considerably larger than all of continental U. S. A. Africa is crossed by the Equator at a point just below much-publicized Dakar, and the continent is almost entirely tropical in climate. Africa's tip end is famous Cape of Good Hope, discovered nearly 500 years ago by Portuguese explorers. North of the Cape are the great Kimberley diamond mines, and in climate this section is similar to the southern United States. North Africa is the home of one of the world's oldest civilizations, Egypt. The parts of North Africa now occupied by our troops were settled and civilized in ancient Roman times. Yes, Africa has a long, long history. We Americans are discovering it today.

Lehigh Cement was used in this North African flying field.



American Military Policeman on duty in a North African town.

PHOTO BY U. S. ARMY SIGNAL CORPS

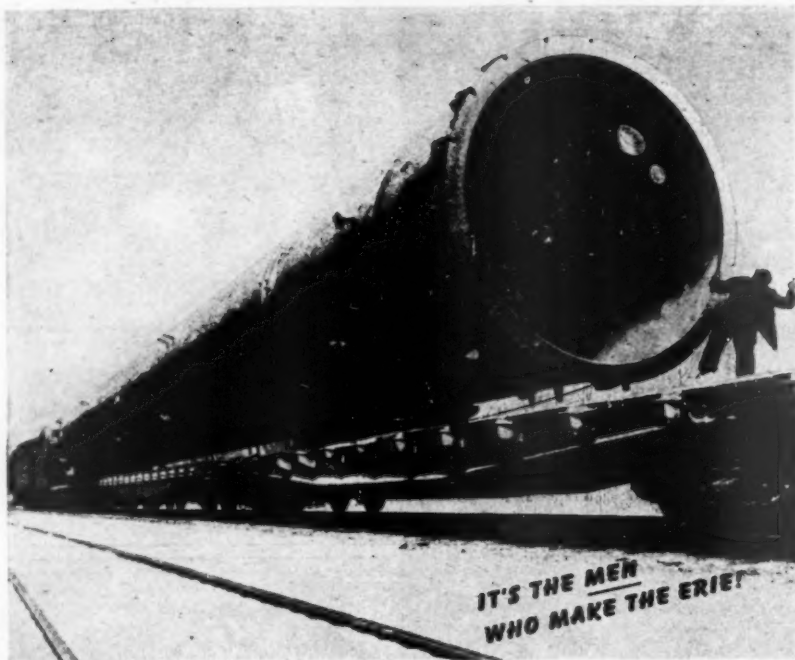
... and to Lehigh Cement!

... somewhere in Africa, and at other of America's outposts, concrete made with Lehigh Cement helps speed our war program. The same is true here at home, where Lehigh does a big construction job often replacing critical steel. When service strength concrete is needed

in a hurry, Lehigh Early Strength Cement provides denser, finer concrete in $\frac{1}{3}$ to $\frac{1}{5}$ normal curing time... gives quicker job completion and often reduces costs on private and war work alike. Ask the Lehigh Service Department for particulars and complete data.

Lehigh
CEMENT

LEHIGH PORTLAND CEMENT COMPANY • ALLENTOWN, PA. • CHICAGO, ILL. • SPOKANE, WASH.



How Three Flat Cars Help Solve the Flat Tire Problem


You're looking at one of the biggest shipments that ever traveled by rail.

It's a fractionating tower—three flat cars long. And it's on its way to a chemical processing plant where it will soon be turning out chemicals to be used in making synthetic rubber.

The high, wide clearances on the Erie made it possible to get this shipment through. But it takes more than oversize clearance to insure the safe and speedy delivery of this or any other war shipment to its ultimate destination. That's where *manpower* comes in.

In this case, more than the usual amount of attention to details was required even to *plan* the transportation job. A caboose was placed in front of the three flat cars and another caboose back of them. And a special crew stood guard front and rear to see that this precious cargo reached its destination safely.

High and wide clearances help speed the war effort—but it's the *men* who really deserve the credit for making the impossible an everyday accomplishment.



23,578 FREIGHT TRAINS DAILY

1,408,964 FREIGHT CARS DAILY

25,000,000 NET TONS DAILY

AMERICAN RAILROADS AT WAR

THE RAILROAD OF HELPFUL SERVICE

industry an unlimited possibility of postwar expansion to dwarf the record of steadily increased production.

	Vegetables (in pounds)	Fruits (in pounds)
1937.....	72,509,962	111,443,212
1938.....	89,752,489	129,184,412
1939.....	72,576,625	140,618,412
1940.....	83,274,626	172,443,412
1941.....	107,190,012	202,307,412
1942*.....	162,000,000	199,127,412

* Estimated by Dept. of Agriculture. Figures for other years from Western Canner and Processor Yearbook.

• **Government Big Buyer**—The Dept. of Agriculture estimates that the 1942 vegetable pack will be between 240,000,000 lb. and 260,000,000 lb. More than 70,000,000 lb. of this will go to the government, which absorbed only 13,000,000 lb. of frozen vegetables in 1942. The remainder will be marketed through 1,000 distributors to institutional use and 35,000 retail outlets.

Birds Eye, which accounts for about half of total frozen food sales, reports a 45% increase in total business last year, including quick-frozen meat, fish and poultry. Total production is usually about 47% vegetables, 21% fruits, 21% fish, 7% poultry, and 4% meat.

Because of the big Army and lend-lease takings this year, consumers sales may even fall somewhat below last year level, and now, thanks to the rationing point cut, those supplies will be gobbled up faster than ever, for the advertisement Birds Eye did to move goods at the high ration-point levels is sure to make consumers conscious of the new bargains in frozen foods. And the combination of the two—promotion plus suddenly expanded use—is sure to make for a much greater permanent acceptance of the frozen product, once the trade is able to exploit the market without restriction.

• **Institutional Trade**—Quick as the industry has been to make the most of consumer rationing, it's another story with the institutional trade. Hotels, restaurants, and the like, allowed 60% of the processed foods used in December have been hardest hit. Most of them invest reduced quotas in catchup and not such foods as cannot be obtained fresh. Consequently the bottom has fallen out of the institutional market which usually accounts for almost half of the frozen foods business.

Waterman & Co., distributor of Honor Brand Frosted Foods Corp. in the New York area, reports that sales are off 75% since rationing began, and other dealers report a similar plight. Pleas for reduced point values and increased shares for the institutional trade poured into OPA.

• **Restaurants Squawk**—OPA heard also from restaurant and hotel operators who lack ration quotas for frozen foods and have had to pay skyrocketing prices for fresh produce which has had neither ceiling prices nor competition to hold it back.

POSTWAR FARM MACHINES

Another name can be added to the list of companies going after the inflationary gap by urging consumers to buy now for postwar delivery. Under the version of the Nugent (installment financing-in-reverse) plan (BW-Jan.30'43, p.12), the Gravelly Motor Plow & Cultivator Co. at Dunbar, W. Va., proposes that customers establish their priority position on farm machinery for postwar production and delivery by ordering it now—and paying for it now in part or full.

Money received on buy-in-advance orders will be invested in war bonds, interest on which will be applied to payment for farm equipment when it is delivered.

Gravelly guarantees delivery at no specific date, promises only that orders will be filled in the order in which they are received.

Other concerns offering such layaway plans include the Radio Corp. of America (BW-Mar.27'43,p68); the Hartford (Conn.) Electric Light Co.; Lincoln Electric Co., Cleveland; Elgin Machinery Co., Elgin, Ill.; International Milling Co., Bristol, Pa.; F. B. Redington Co., Chicago; and Crown Cork & Seal, Baltimore.

HOSEIERY CONTROLS RESISTED

Shades of the Schechter "sick chicken" dominated sessions last week at which the hosiery trade, having achieved a month's postponement of dollar-and-cents ceilings and mandatory grade labeling for women's rayon hosiery (BW-Apr.17'43,p70), continued to resist price control order M-339. Arguing that once the control order is challenged in the courts, the industry will go the way of NRA, the industry appealed to Washington to throw M-339 out before it becomes effective May 15.

Price administrators realize now that hosiery men—particularly retailers—will not be appeased by postponement or concessions allowing the trade to clear out at Grade A prices, inventories that do not meet OPA's Grade A standards (BW-Mar.20'43,p80). OPA now has a more complete revision in the works for presentation before May 15—and this time the trade has seen to it that hosiery men are consulted. The forthcoming version probably will boost prices on branded lines (one-third of total output) and relax grading specifications.

But retailers' protests—formal and informal—indicate that they aren't counting on OPA to produce a much more palatable order this time. A resolution that is submitted by the National Retail Dry Goods Assn. accuses OPA of violating in M-339 both the Robinson-Patman Act and the Price Control Enabling Act.



They're "BLACKHAWK HYDRAULIC-EQUIPPED"

LONG before the war, leaders in many lines whose trademarks you respect, recognized Blackhawk Hydraulics as a valuable sales feature for their products.

Today, Blackhawk Hydraulic Controls are proving their ability to an extent far beyond pre-war conceptions . . . forecasting broader future applications of this Hydraulic principle.

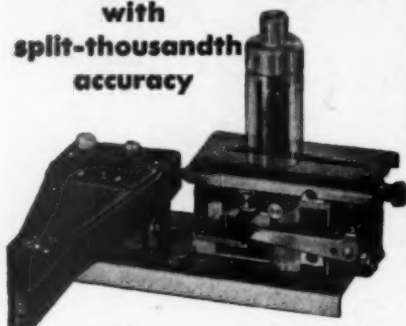
Industry, preparing for the post-war era . . . aiming to advance product standards and American leadership . . . finds Blackhawk experience, facilities and proven units valuable in the planning of new products or in Hydraulically modernizing pre-war or present products.

Contact "Hydraulic Headquarters" by writing to Blackhawk Mfg. Co., 5300 W. Rogers St., Milwaukee, Wisconsin.

BLACKHAWK

Hydraulics

**For rapid gaging of
INSIDE DIMENSIONS**
with
**split-thousandth
accuracy**



THE TRICO MICRO-CHEK is now in use in more than 2250 war plants to speed up nearly all types of precision gaging. Multiplies dimensions by 200—reducing eyestrain and fatigue.

The new Caliper Type facilitates rapid gaging of internal dimensions, regardless of shape—from 3/16" to 2-1/2"—by means of expanding caliper fingers. Set up ready for use. Applicable to practically any recessed gaging need—replacing plug gages. Adjustable against wear.

TRICO

Write for illustrated booklet
showing many applications
of Micro-Cheks.

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"BUY" OF YOUR LIFE



Invest every cent you can in United States War Savings Bonds and Stamps. They're the best investment you can make in your country's future and your's, too.

For the
"REST" OF YOUR LIFE



For solid comfort choose the hotel that thousands of experienced travelers pick! 1200 rooms with bath, radio, circulating ice water and Servidor.

Make reservations in advance
R. J. Glenn, Manager

**HOTEL
GOVERNOR
CLINTON**

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Opposite Pennsylvania Station
NEW YORK

LABOR

Absentees Rated

BLS finds only 5.4% in 25 war industries away from jobs in March; shipyard and aircraft rates higher.

National statistics on absenteeism were available for the first time this week as the U. S. Bureau of Labor Statistics announced the inclusion of a new series of figures in its monthly battery of data. After a protracted period, in which mounting concern over absenteeism was fed by irresponsible estimates and emotional speeches, war production directors found some comfort in the fact that the BLS survey of 25 industries revealed an absentee rate of 5.4% for March.

Not by any means ideal—only 2.5% is normally attributable to illness alone—the 5.4% figure is a welcome contrast to England's steady 10% and to some of the extreme guesses.

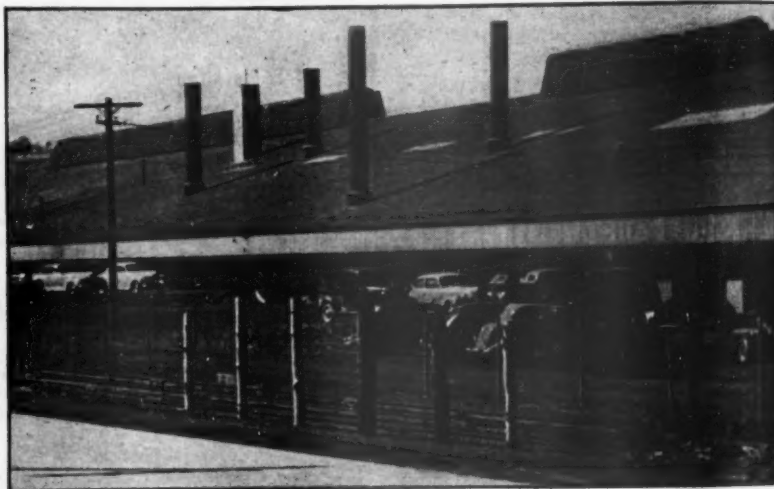
• **Turnover More Serious**—The BLS figure is based on reports from 2,754 establishments employing 1,613,000 wage earners in industries important to munitions production. The sample will be

broadened each month. But for the present at least, labor experts are convinced that turnover (chart, page 15) is a more serious problem than absenteeism.

The bureau suggests that for purposes of comparison it may be noted that an absence of one day each month, or twelve days a year, is equivalent to a 4% absence rate for an employee scheduled to work 300 days per year. In surveying the basic war industries for an average figure, the bureau did not select schedules to shipyards or aircraft plants. These were the subjects of separate studies and reveal rates in January of 8.9% and 6.4% respectively.

• **Whole-Day Absences**—On the schedule used by BLS, the employer was requested to show, for each day and each shift during the report week, the number of wage earners scheduled to report for work and the number who failed to do so. The rates reported are therefore based on whole-day or whole-shift absences and exclude time lost because of part-day absences. No attempt was made to secure separate rates for voluntary and involuntary absences, because many establishments would be unable to furnish data on this basis.

Accordingly the interpretation of the statistics should allow for the fact that



NO GATES AJAR

Quiet has returned to Clearfield, Pa., but the memory of what can happen when a fence has too few gates still haunts the Harbison-Walker Refractories Co. management. Recently, the company enclosed its three brick-making plants and machine shop within a safety fence. The boys in No. 1 plant kicked that the gate down

near No. 2 plant was inaccessible. The gate was moved, and a barricade of poles (above) planted to prove it. Immediately the No. 2 plant workers claimed they had been locked out and refused to work. In short order, the walkout spread to other district plants affecting 1,300 of the C.I.O.'s United Brick and Clay Workers. The strike lasted seven days before a regional War Labor Board untangled it.

LAST YEAR'S BONDS GOT US STARTED

THIS YEAR'S BONDS

ARE TO WIN!

★ Last year saw nearly 30,000,000 workers voluntarily buying War Bonds through some 175,000 Pay-Roll Savings Plans. And buying these War Bonds at an average rate of practically 10% of their gross pay!

This year we've got to top *all* these figures—and top them hand-somely! For the swiftly accelerated purchase of War Bonds is one of the greatest services we can render to our country . . . and to our own sons . . . and our neighbors' sons. Through the mounting purchase of War Bonds we forge a more potent weapon of victory, and build stronger bulwarks for the preservation of the American way of life.

"But there's a Pay-Roll Savings

Plan already running in my plant."

Sure, there is—but how long is it since you've done anything about it? These plans won't run without winding, any more than your watch! Check up on it today. If it doesn't show substantially more than 10% of your plant's pay-roll going into War Bonds, it needs winding!

And you're the man to wind it! Organize a vigorous drive. In just 6 days, a large airplane manufacturer increased his plant's showing from 35% of employees and 21½% of pay-roll, to 98% of employees and 12% of pay-roll. A large West Coast shipyard keeps participation jacked up to 14% of pay-roll! You can do as well, or better.

By so doing, you help your na-

tion, you help your workers, and you also help yourself. In plant after plant, the successful working out of a Pay-Roll Savings Plan has given labor and management a common interest and a common goal. Company spirit soars. Minor misunderstandings and disputes head downward, and production swings up.

War Bonds will help us win the war, and help close the inflationary gap. And they won't stop working when victory comes! On the contrary—they will furnish a reservoir of purchasing power to help American business re-establish itself in the markets of peace. *Remember, the bond charts of today are the sales curves of tomorrow!*

You've done your bit Now do your best!

THIS SPACE IS A CONTRIBUTION TO AMERICA'S ALL-OUT WAR EFFORT BY
BUSINESS WEEK

H. K. PORTER, Inc.

hits new production peaks to
meet urgent fighting needs for
HKP WIRE CUTTERS

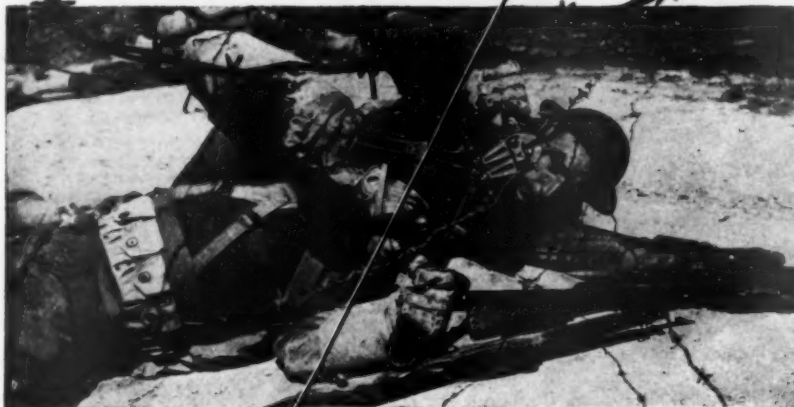


Photo by U. S. Army Signal Corps

The sudden responsibility thrust upon H. K. Porter, Inc. of Everett, Mass. to supply our Armed Forces with wire cutters at an unprecedented rate was a challenge to production ingenuity! Quality wire cutters—new designs and modifications of standard models—were a vital military requirement. H. K. Porter, Inc. accepted the challenge. Despite limited plant facilities and floor space, every possible step was taken to force existing facilities to the utmost, on a 24-hour-a-day, 7 day week basis. With the assistance of Plocar Engineers, new layouts, new methods, improved controls were successfully instituted. Today, "HKP" tools are being delivered on time. Similar cooperation—plant engineers with the Plocar staff—is available to plants heavily burdened with war production. Write:

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ENGINEERS**

reported rates are based on both excused and unexcused absences and include time lost by reason of sickness and injuries.

• **How to Compare**—An employer who wants to compare his own absence rate with the BLS average should be certain that his method of compilation conforms to the official formula. Calculations should cover wage earners only, exclusive of salaried personnel.

The total number of man-days to which employees are assigned in any one week is taken as the base figure in calculating the rate of absenteeism. Employees on temporary layoffs or out on established days of rest or leave should not be included.

After the base number is secured, an actual count of employees at work is made, and the number of absences determined. The absentee rate, expressed in percentage terms, is arrived at by dividing the number of absences in a given week by the base figure.

Workers by Edict

Many state legislatures pass new laws and modify old ones in order to get more labor, particularly for farms.

State legislatures have been doing their best to ease manpower shortages. Work-or-fight laws are going into the books, restrictions on work-hours for women have been relaxed as have child-labor statutes, and enactments to augment the farm labor supply are widespread. Most of the new laws contain protective limitations, but some leave control up to administrators.

• **Survey Shows Trends**—Examples of action taken (or still pending in the legislatures remaining in session) are available aplenty in a recent survey by the American Public Welfare Assn.

A "work-or-fight" measure was enacted at their request for 14 counties in Maryland (still to be signed by the governor) to apply to any sane, able-bodied male not in the armed forces, and to include persons able to support themselves on rental from property or other income. Anyone, except students not occupied in some business, trade, or profession, who refuses to accept at prevailing wages employment for which he is physically qualified is guilty of a misdemeanor and liable to fine of \$500 or imprisonment for six months. The Delaware legislature is considering a similar measure which would apply to men 16 to 50.

• **Prison Labor**—Maryland also has enacted a measure authorizing conditional release of prisoners to work for the Baltimore hospitals and other city and state institutions desperate for labor supply, while a similar law in North Carolina

...takes prison labor available to farmers. To cope with the farm labor shortage, California has a new act setting up a farm production council of experienced agriculturists for recruiting, distributing, transporting, and housing farm workers. County farm production committees and local farm production coordinators, named by the counties, will work with the council and its director on problems ranging from securing priorities for farm equipment and repair materials to establishing student harvest camps. A \$1,000,000 appropriation has been made to finance the program.

• **Longer Hours for Women**—New labor laws relating to women cancel all work-hour limits in some states but in others apply to specific industries only. Indiana and Wyoming suspended all work-hour limits for women, while California made the suspension conditional upon the governor's consent. Arkansas established a 48-hour week for women with time-and-a-half pay for all hours over 40, and Nevada exempted women employed in carrier and communication enterprises from the state 48-hour law.

A new Washington law, assuring women equal pay for equal work and affecting approximately 211,000 female workers now employed in the state, was passed over the opposition of business and industrial interests. They felt that it would invite trumped-up law suits against employers.

• **Labor Backs the Idea**—Pushing the Washington law were women's groups, abetted by labor unions which were eager to make sure that women will not be continued in normally male-filled jobs when the war ends. They believe that, when men are again available, women will be dismissed if no pay discrimination is possible.

Other states changing labor laws to make possible expanded employment of women include Montana, Delaware, North Dakota, New Hampshire, Tennessee, and Utah.

Most of the laws pertaining to child labor permit employment of boys in bowling alleys and dairying, lower the eligibility age for drivers' licenses, or release school pupils for farm work. Example of the first group of laws is the North Dakota act permitting children under 18 to work as pin boys with consent of their parents. A new law in Delaware permits boys to work on milk routes between 5 a.m. and midnight, and a Kansas law allows children under 16 to hire out to farms and dairies.

• **Driving Law Changes**—States lowering the age for drivers' licenses include Indiana, now issuing conditional licenses for truck driving to 16-year-olds. License age for school bus drivers was lowered in Oklahoma to 16, and in California and Texas to 17.

North Carolina, California, and Utah authorized "compressed" school terms to release students for farm work. The

THERE ARE NO FRILLS ON A JEEP... it is dressed down to the essentials needed for its job. Whiting Victory Cranes, too, are designed only for performance... without extras or unnecessary gadgets. Like the jeeps, they are doing a swell job for their country.

WHERE NEED IS URGENT, order WHITING Victory CRANES

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BUILDERS OF QUALITY CRANES FOR NEARLY 60 YEARS

There is just one way to win this war—*make every minute count*. Delays in handling production materials will cost lives at the front.

Whiting Victory Cranes are designed to get into service in the shortest possible time... to give dependable, low-cost operation over a long period of years... to give every customer satisfactory service. There's a long-standing Whiting Guarantee which assures that every Victory Crane will do exactly that! Whiting Corporation, 15661 Lathrop Ave., Harvey, Illinois.



Imagine!—a million *extra* man-hours instead of over 300 workers engaged in non-productive jobs. Sounds incredible, but it's what a recent War Plant Pneumatic Tube Survey uncovered.

Lamson engineers, working with plant executives, found one million man-hours a year lost carrying work-papers, mail, blueprints, test samples, gauges, and small tools.

Not only this, but both papers and materials could be delivered faster and production increased by Lamson Tubes.

One plant executive summed it up when he said: "The system will give us papers and reports while they are news, *not history*."

And remember, this is in addition to the thousands of man-days that will be saved and production increase that will be accomplished by the Lamson Conveyors now being installed in this plant.

LAMSON CORPORATION

Syracuse, N. Y.

Makers of Conveyors and Pneumatic Dispatch Tubes

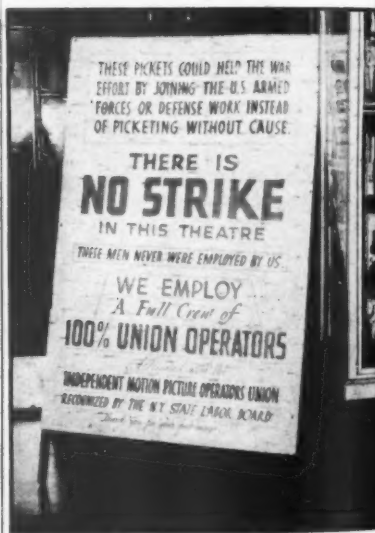
New York legislature continued authority granted previously to release pupils for planting and harvesting and enacted a new law allowing canneries to hire school children excused from classes during the busy season.

• **For the Professions**—New laws to alleviate the shortage of teachers, doctors and other professional workers included an Arizona act eliminating the one-year residence requirement for teachers and an Arkansas measure permitting retired teachers to return to service without losing retirement rights.

California permitted state employees 70 years or older and subject to retirement to remain in service for the duration, while Indiana prohibited policemen and firemen from retiring on pension during the war. Delaware, Nevada and Washington provided for temporary licensing of physicians and dentists and Kansas permitted nurses from outside the state to practice in Kansas for the duration.

• **Aid for the Aged**—To encourage the able aged to contribute their work efforts to the war, California reduced the period of investigation for old age assistance from 90 to 30 days, so the needy aged accepting private employment could be returned to assistance without a long wait. Montana will allow needy aged seasonal work to receive assistance as soon as their jobs end.

State and local supervision of child care, to accommodate working mothers



CALL TO ARMS

Something new has been added to strike bantering by a Manhattan movie house manager. When A.F.L. motion picture machine operators set up a picket line after a dispute with independent operators, the manager authored a sign—a new high in patriotic indignation.

was provided by California, Indiana, Utah, Vermont, and Washington which authorized school or other agencies to establish nursery schools.

• **Fewer Restrictions**—Among other provisions bearing on manpower is a new California law simplifying procedures on birth certification, important to applicants for war jobs, and a Utah measure permitting Japanese to lease property on a yearly basis for food-growing.

Union Raps NWLB

Auto workers decry board action denying wage increases in "inequity" cases; outburst concerns G.M. contract.

Emphatic protest has come from C.I.O.'s powerful United Automobile Workers Union against the National War Labor Board order eliminating consideration of wage adjustment cases based on "inequalities and inequities" (BW-Apr.17'43,p15). A special board meeting in Cleveland this week discussed ways and means of making the protest effective.

• **General Motors Case**—Simultaneously, the union's General Motors department awaited reaction to its notification of intention to reopen the wage provisions of its contract with G.M. Walter Reuther, director of the department, said the negotiations were being sought "notwithstanding the President's order or the WLB interpretation of it."

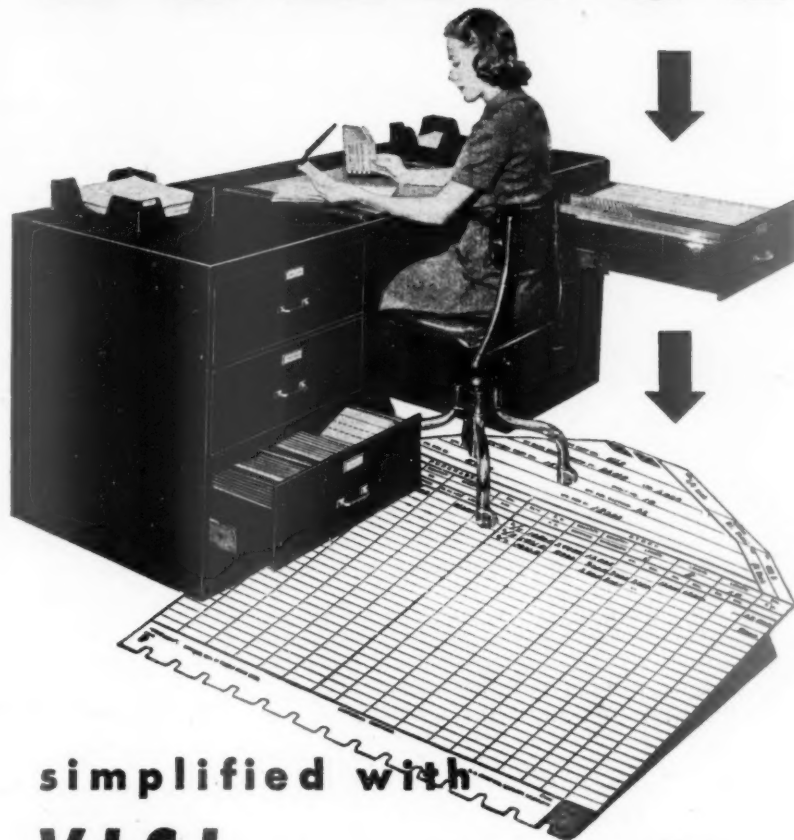
The General Motors negotiations will be used, Reuther indicated, to spearhead a drive throughout the auto industry to obtain equal pay for equal work. As evidence of union complaints on this score, he said that armor plate welders were getting \$1.29 an hour at one unspecified tank plant, while identical work in another plant a few miles away was bringing but \$1.14.

• **Right on the Dot**—Notification to General Motors of intention to reopen the wage provisions was revealed to have been sent Apr. 5, the earliest possible day after the six-month wage freeze ordained in the contract signed last fall.

Equal pay for equal work has been a long-term objective in union negotiations. The management objection has generally been that different time standards, working conditions, and methods of job classification in various plants made it impractical. The union stand has been as adamant in its insistence that such hurdles were easily surmounted. It seems obvious that General Motors and any other companies made the objects of union pay drives would cite the NWLB order as a reason for declining to discuss the matter.

• **The Final Step**—Labor insistence could then be expected to take the matter to

Control



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From receipt of the raw material to final delivery of the completed order, VISIrecord controls essential operations of production!

VITAL FACTS for instantaneous analysis and decision recorded on VISIrecord's Triple Visible Margins . . . Comparison of Costs . . . Exact Status of Individual Jobs . . . Shipments Made and Due — provide the Controlling Executive with a complete and accurate picture of every important order, and enable him to instantly spot the cause of slow downs in production.

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Do You Believe?

Do you believe that Industrial Progress is the basis of all good living?

That Industry is the source of better living is so clear to you and me that it would seem everybody would understand it.

But when we try it on your friends and neighbors! Or, review the course of history! Or look among our laws to see how many were designed to encourage industrial growth!

You'll find that few people know where good living comes from.

We are trying to explain the source of good living in McGraw-Hill magazines, and in newspapers. A current advertisement is shown here.

We ask other companies, all over the nation, to join us in running the "Seed Money" message. We supply free mats (1,470 line size, for newspaper use) with space for name of local sponsor.

James H. McGraw, Jr.
President

McGraw-Hill Publishing Company, Inc.

GOOD LIVING Comes Only from Industrial Progress

THE more we believe in the Four Freedoms, the greater our obligation to understand them, and to know exactly what we have to do to enjoy *all* of the advantages they imply.

Take Freedom from Want, for instance. Where will it come from? Will it be the gift of a government department? Can it be created by issuing orders and directives?

► Of course not. Executives and government departments get their powers as well as their money from Congress. Can Congress create Freedom from Want by law?

Not in the final analysis. Congress can only allocate the total energies of our nation by law. It can take all the good living there is and divide it up differently.

So, if you happen to live poorly and want to live better, it's to your interest to see that Congress does a very wise job when the time to divvy up arrives.

Reprints of this advertisement are available in booklet form. (Less than 100 copies free. Larger quantities, \$1.50 per 100; \$10.00 per 1000.)

Good Living Comes Only from Industrial Progress (cont'd)

Congress can assume either that industry can't grow any more and try to solve the problem by dividing up existing jobs, or it can stimulate *more* good living, through wise laws that encourage industrial progress and make more jobs.

► Multiplication will work a lot better than division, in this case.

If Congress will hold on to the fact that art, science, political experiments, luxuries AND necessities *all* must have their foundations in healthy industry, it will be more likely to pass only those laws which encourage industrial growth.

"Seed Money" an Example

When Congress, and the people, realize that business progress is the foundation of all improvement, our tax laws will stop confusing personal profit (salaries and dividends) with reinvested profit.

Profit held for reinvestment is the SEED MONEY of business. It is the money a business saves from current operations to insure future growth.

► Business will need billions of "Seed Money" dollars when the war is over. But, under the present tax law, industry cannot save as it should for that rainy day.

You hear lots of talk about the jobs that will result from the transparent automobiles and the sky-sedans that industry will build after the war, but not enough talk about the need for SEED MONEY to turn those hopes into realities.

The practical fact is that business cannot adjust itself to postwar production without "Seed Money."

► "Seed Money" will pay for the research that must come before new and better postwar products can be built. It will pay for re-tooling when new models are produced. It will pay for the study of methods to get the lower costs that will make it possible for more people to buy. It will pay for setting up new distributors and dealers, and for hundreds of other activities that are involved in the growth of business.

The tax law should be adjusted to allow business to accumulate funds for these necessary tasks of postwar development.

Ask your Congressman to see that American business is given a chance to create jobs after the war, by revising the excess profits tax so as to leave the "Seed Money" and by reviewing all laws with this principle in mind:

*"Industrial Progress
is the Source of all Good Living."*

THE MCGRAW-HILL NETWORK OF INDUSTRIAL COMMUNICATION

22 publications, which gather "war-news" from the "war-production-front" through a staff of 153 editors and 725 engineer-correspondents . . . More than 1,500,000 executives, designers, production men and distributors use the editorial and advertising pages of these magazines to exchange ideas on war-production problems.

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This part gets
8 DIMENSIONAL INSPECTIONS
 to $\pm .0001$
in less than $\frac{1}{2}$ second!



AUTOMATIC
Precision
 INSPECTION

It's a vital piece of war production equipment, perfect in every detail and produced with incredible speed. Specifications require that eight different dimensions be held to their tolerances within plus or minus .0001.

Today, Electric Eye equipment is making all these eight dimensional inspections simultaneously at the rate of 135 pieces per minute — less than one-half second per piece. Inspection line bottle necks are eliminated. Inspection costs are materially reduced. And workers are released for productive effort.

With unvarying accuracy, Electric Eye equipment will maintain tolerances right down to plus or minus .0001. Inaccuracies due to friction, gauge variables, and the human element are eliminated. And there is no problem of gauge maintenance and replacement.

Electric Eye inspection insures accuracy, speed, efficiency, and economy. On one job Electric Eye equipment is gauging in micro-seconds. On another, a cost analysis on a battery of several Electric Eye machines shows a net saving of \$167.45 daily per machine.

If you have a mass production inspection problem we suggest that you consult with us. There's no obligation, and we believe you'll find it to your advantage.



ELECTRIC EYE EQUIPMENT COMPANY
 6 W. FAIRCHILD ST.
 DANVILLE ILLINOIS

the NWLB, where credit could be taken if the no-raises platform was overturned and where, if it proved invulnerable, the labor leaders would have demonstrated to their members that every possible effort had been made.

Victory Picking

California citrus growers find part-time students helpful at harvest; but they still long for "professional" pickers.

California citrus growers, now gathering the last of their winter navel oranges, have learned much about getting voluntary labor the past two seasons.

• **Boys Best Suited**—Best emergency pickers are junior college and high school boys. Lugging ladders and bags is real work, too heavy for girls. The boys may be moved by patriotism, but in the end they pick for the money earned. Girls—principally schoolgirls—do nicely for wrapping and packing.

Business club members, professional men, merchants, and clerks go out with enthusiasm and are likely to get charley horses. They pick fewer boxes, are best when called for short spurts of picking over week ends.

• **Organized by Schools**—Students are organized by school authorities to pick four hours a day, several days a week. Classes are shortened those days. Students also pick during week ends and recruit younger boys for Saturday and Sunday.

Three factors will help to hold student pickers. They must be carefully supervised and taught how to pick; they should work apart from professionals; they must be paid standard wages.

• **Vacation Advanced**—School authorities advanced one-week spring vacations to permit students to pick fruit held on trees by late rains.

For summer picking, boys in camps, with Y.M.C.A. supervision, did good work last year; they will be hired again this season. With songfests and recreational activities, camps draw boys from longer distances. Supervision reassures parents; fun attracts the boys; the money holds them.

• **Pick for Victory**—Strong impetus to volunteer picking this season was given by Riverside Division of the Food Machinery Corp. The company ran an advertisement in citrus belt newspapers arousing interest in a Pick-for-Victory movement, greatly assisting recruiting.

Orange growers want more Mexican pickers. They have been assured by Washington that help is just around the corner, but it has not yet arrived in sufficient force. When Mexicans do arrive, they may go to sugar-beet truck fields instead.

WINTER'S OVER—

It's time to take a good critical look at your car or truck and take stock of the winter's effect on it. Then take it to your nearby Plymouth, Dodge, DeSoto or Chrysler dealer for a spring conditioning treatment.

If the winter's accumulation of dirt, scratches, rust and dents is allowed to remain and the mechanical service your car or truck needs is postponed, its useful life may be shortened. But, by giving it a spring conditioning, winter's effects can be removed and many useful miles added to its life.

Here's a helpful list of things to check, prepared by factory service engineers:

- 1 Drain anti-freeze (save if possible) flush cooling system, tighten all connections.
- 2 Have engine tuned for warm weather driving.
- 3 Remove all dents and rust spots. Touch up with paint.
- 4 Clean Chrome of all rust. Cover spots with clear lacquer.
- 5 Wash and polish car to remove road scum. Wax for protection.
- 6 Have brake system checked and necessary adjustments made.
- 7 Clean spots from interior upholstery. Clean floor mats. Install seat covers for protection.
- 8 Check front wheel alignment and rotate tires if necessary.
- 9 Lubricate entire car and change engine, transmission and differential lubricant.
- 10 Tighten entire car.

NOTE TO ALL REPAIR SHOPS

See your nearby Plymouth, Dodge, DeSoto or Chrysler dealer for factory engineered and inspected parts. For Dodge truck parts see your nearby Dodge dealer.

PLYMOUTH DODGE
DESOTO CHRYSLER

DODGE Job-Related TRUCKS

CHRYSLER CORPORATION

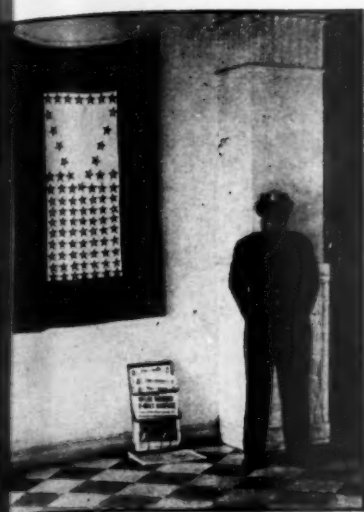


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Production



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with Car and Truck
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★ BUY U. S. WAR BONDS AND STAMPS ★



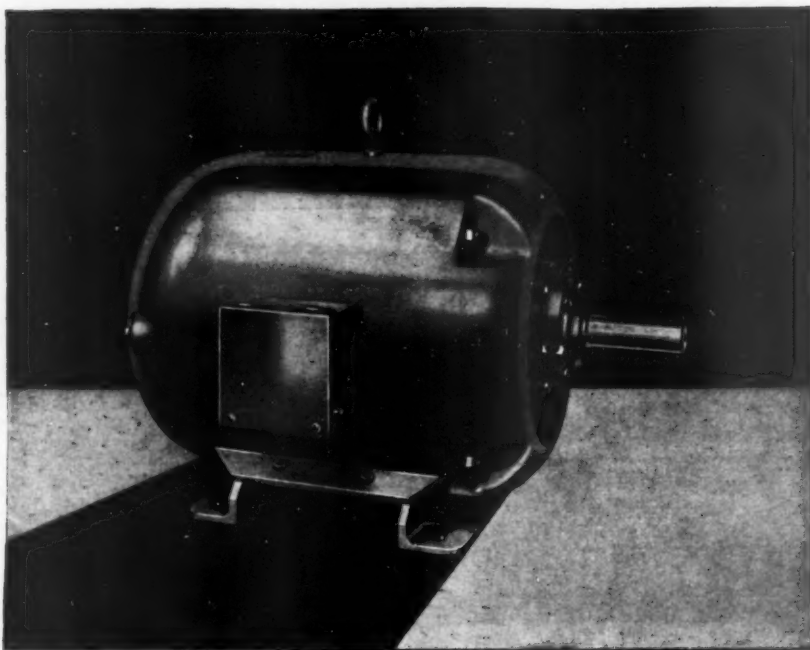
DRAFTERS DRAFTED

National Selective Service workers at Washington are not exempt from the system they operate. At draft headquarters, a service flag in the lobby shows that many employees are serving the colors. To date, 90 men and 10 women have given up the occupation of drafting to don uniforms.

A.F.L. SCORES AT KAISER

Unless the National Labor Relations Board decides to reverse the ruling of its Portland (Ore.) trial examiner, hearings of C.I.O. complaints against Henry Kaiser's northwest shipbuilding operations may conclude by May 1. Robert N. Denham, the board's examiner, has dismissed a major portion of the complaint after finding that the testimony of several witnesses for the C.I.O. was of doubtful credibility and that it could not be proved that Kaiser conspired against the C.I.O. in signing with A.F.L. C.I.O.'s charges, alleging that the company aided and assisted the A.F.L., are only one part of the complaint. Another issue to be decided is whether Kaiser signed a closed shop with the A.F.L. before an appropriate bargaining unit was established at his yards (BW—Nov. 28 '42, p94). This point almost certainly will eventually have to be decided by the courts.

In dispute is the question of whether, by signing a closed shop contract while only 66 employees were at work in an establishment that was to employ thousands, Kaiser acted in good faith or moved to lock his gates against the C.I.O. The question not only has disturbed Kaiser's labor relations, but also has been a drawn sword between the two rival union organizations. Also involved is the position of NLRB which has reason to fear that a finding against Kaiser will stir the ire of Congress.



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On combat vessels and troop ships, in airplanes, in factories, in power plants, in mines—wherever electric motors are used in the war effort, or in civilian life—you'll find Wagner motors living up to their reputation for excellent quality and dependable performance.

Ever since the company was founded 52 years ago, the Wagner name has been synonymous with quality of the highest degree. This recognition applies not only to Wagner electric motors, but also to Wagner transformers, fans and industrial hydraulic braking systems.

If you need motors, or other products made by Wagner, consult the nearest of Wagner's 29 branch offices, located in principal cities and manned by trained field engineers.

FOR VICTORY—BUY U. S. WAR BONDS and STAMPS

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Wagner Electric Corporation

ESTABLISHED 1891

6460 Plymouth Avenue, St. Louis, Mo., U. S. A.

ELECTRICAL AND AUTOMOTIVE PRODUCTS

SAVING FACE IN STRIKES

To Washington labor officials charged with keeping peace on the home front, the difference between wildcat and authorized strikes is academic. Equally pointless from a practical standpoint, but significant for purposes of face-saving, was the dispute over a strike last week at the Thompson Products' Cleveland wood plant in Cleveland.

Before calling the strike, Ed Hall, organizer for C.I.O.'s United Automobile Workers, announced that if demands for reinstating shop stewards were not met he was authorized by R. J. Thomas, international president of his union, to call a strike. Hall made good his threat: there was a one-day walkout which apparently affected less than 10% of the plant's workers, but Thomas repudiated Hall's announcement that the strike had been authorized. Left holding the bag, union members went back to work.

Calling of the strike not only failed in its purpose of consolidating the C.I.O. union's bargaining position, but also backfired in that nonunion workers were incensed that a strike should be called to interrupt war production. Cleveland officials of the federal agency have recommended that the National War Labor Board determine responsibility for the strike and "take whatever action seems appropriate."



FAST FOOTWORK

Operating a rotary welding fixture at Fisher Body plant in Detroit was once quite a chore until William Bolton, fixture and jig department employee, came up with an improvement. He substituted a foot control for hand push buttons. Now welders no longer have to shift torches, lift face shields to find the buttons. The foot lever gives perfect control, leaving hands free for the job.

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OCD'S LABOR PROGRAM

The Office of Civilian Defense, through its 13,000 local councils, is spending every effort to help alleviate labor shortages. What was learned from community enterprises last year is serving as the blueprint for 1943.

Each council tackles local problems on its own, but Washington passes word along about proved plans. OCD, for example, has printed a map-folder to illustrate the way Atlanta is running its self-dispatching share-the-car system. The agency tells how volunteers in Oklahoma City turned out and, in a single night, surveyed all housing available for war workers; how, in Sedalia, Mo., 10,000 men employed by the Missouri Pacific Railroad were enlisted to work in the wheat fields after their regular jobs; how the 17,000 people of Modesto, Calif., were mobilized to pick the peach crop.

Block leaders in many short-labor districts are surveying labor reserves such as women, students, retired workers, non-essential industries. Other problems that are being tackled are absenteeism, care of the children of working parents, transportation, housing, and health protection.

REMEDY FOR ABSENTEEISM

Laundrymen see an opportunity to profit by the washday troubles of women war workers. The New Jersey Laundry Owner's Assn. has made a deal with a number of plants whereby workers deposit and collect their bundles at a central station at each factory. This scheme saves the laundries the trouble of collecting and delivering to individual workers, also relieves the workers of having to lay off while hunting up a laundry or washing their own.

METAL WORKERS GET RAISE

Increased wages for 10,500 more non-ferrous metal workers (in all cases, upward adjustments that had been decided before the Apr. 8 wage-freezing deadline, it was announced) were made public late last week by the Nonferrous Metals Commission in Denver (BW-Apr.17'43,p106), bringing to approximately 51,000 workers—out of a total of 85,000 in the industry—the number who got wage increases before the President's "hold-the-line" order.

Largest working forces involved in these latest wage orders were 2,000 employees of Calumet & Hecla Consolidated Copper Co. (Michigan), 2,864 of American Smelting & Refining Co. (Perth Amboy and Newark, N. J., Alton, Ill., and Denver and Leadville, Colo.), and 260 of St. Joseph Lead Co. (Hercules, Mo.). Increases ranged from 5¢ to 12½¢ an hour; other grants included vacations with pay.

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to help rush
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Consult us for design and manufacture of special hand tools to reach the hard-to-get-at spots in your war production job. Plomb engineers have helped many manufacturers find the answers to their problems. They are ready to serve you... now or in the future.

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Throughout the nation Plomb dealers can supply you with regular Plomb hand tools of all types to meet your war needs. See the one in your locality for stock tools.

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THE THIRD MOST INDUSTRIALIZED
STATE IN THE UNION

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the manpower

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- 6—Intelligent labor

TAKE ADVANTAGE OF—

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- 8—Reasonable taxes; low debt
- 9—Able research agencies
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FINANCE

Fighting Money

Treasury's war loan drive
exemplifies the new trends in
government finance, including
official control over market.

No government in history has ever borrowed more than \$13,000,000,000 in one operation, but Treasury Secretary Henry Morgenthau, Jr. was betting on practically a sure thing when he set that as the minimum goal for his current loan drive. Within the past year or so, Treasury financing has become a precision instrument as well as the world's greatest money-raising machine. Barring blunders, the secretary can gear it up to produce just about any amount he chooses.

• **The Change to War**—On the surface, Treasury borrowing techniques haven't changed much since last April and May when Secretary Morgenthau was offering bonds and certificates on about the same terms as those in his new package. Actually, government financing has gone through a lot of evolution in the past year. The present drive and the big bond sale last December (BW—Dec. 5 '42, p96) are part of a new wartime borrowing program which has replaced the traditional system.

Most obvious change in the Treasury's methods was adoption of quarterly drives instead of monthly or semi-monthly trips to the market. Between big campaigns, Secretary Morgenthau now leaves the market alone except for minor operations. This gives it a chance

to rest up and straighten out the distribution of securities.

• **Anti-Inflation Aspects**—Coupled with the shift to quarterly drives is an increasing emphasis on selling bonds to individuals. Meeting a specific dollar goal is now one of the Treasury's lesser problems. It can count on commercial banks to take up any amount of securities it decides to sell them. Secretary Morgenthau's big headache is trying to choose his creditors in the way that will minimize the inflationary effects of government borrowing. That means selling to institutions and individuals.

In the drive now under way, the Treasury doesn't want more than \$5,000,000,000 from commercial banks (BW—Apr. 3 '43, p104). The other \$5,000,000,000 it would collect from the general public. Treasury officials hope that intensive solicitation of institutional investors, individuals, and corporations will dredge up perhaps \$5,000,000,000 more than the minimum.

• **Making the Market**—Before it could begin calling its shots like this, the Treasury had to tighten its grip on the money markets and establish a comparatively stable schedule of prices for its securities. Applying a little skillful pressure to the market was no novelty to Treasury officials, even before the war, but in the past year informal influence gradually developed into outright management. Secretary Morgenthau no longer worries about meeting the market on a new issue. With the help of the Federal Reserve Board, he makes the market.

For some time now, the Treasury has had its rate schedule well established. Dealers take it for granted that there



Bond selling tactics of the Treasury have changed a lot since it adopted the new system of quarterly drives. The current \$13,000,000,000-loan cam-

paign has produced a fancy crop of selling stunts—as in Rock Island, Ill., where salesmen used a retired Army tank to make the rounds.

will be no change until after the war. Within limits, there is still room for market fluctuations, but the Federal Reserve Board will support any issue at par, setting a firm floor under prices. The certainty that there will be a steady stream of quarterly offerings at the same prices clamps on a ceiling.

The Maximum Rates—Highest interest rate in the Treasury's schedule for new issues is 2.9%, but this applies only on Series E war bonds, the baby bonds for small individual investors. Top rate for marketable securities is 4%. This goes with a 20-year bond, available to individuals and corporations but not to commercial banks. Among intermediate maturities, the benchmark is 2% for a ten-year bond.

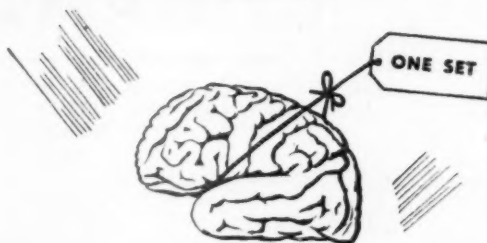
At the other end of the scale, Federal Reserve banks have undertaken to buy Treasury bills at $\frac{3}{8}\%$, thus establishing the maximum short-term rate. Between this and the bonds lies a variety of certificates of indebtedness and Treasury notes, their rates and maturities gradually scaling up toward the short-term bonds.

Tailored to Fit—With this schedule fixed, the Treasury picks its issues according to the types of investors it expects to sell. The present offering, for example, includes a $2\frac{1}{4}\%$ bond, intended for private and institutional investors, a 2% bond aimed primarily at banks, and a $\frac{3}{8}\%$ certificate to balance the longer-term issues. To get smaller investors, Treasury salesmen are also pushing war bonds and tax anticipation notes.

Buying and selling continues in the regular markets for government securities, but Treasury control keeps the ancient supply-and-demand equation from working itself out. Supply is practically unlimited now, and the Reserve banks see to it that demand is sufficient to keep prices at least at par.

The Inherent Danger—Although control of the money market makes life a good deal easier for Secretary Morgenthau and his advisers, it doesn't solve all their problems. Commercial banks are still providing about 40% of the Treasury's new money, and the danger of an inflationary kickback grows with every increase in bank deposits. At present tax rates, the government would have to borrow around \$71,000,000,000 in the coming fiscal year. If banks had to take 40% of that, they would boost deposits—and thereby inflate consumer purchasing power—by about \$30,000,000,000.

Another problem that keeps Treasury experts busy is arranging maturities of new issues so that the debt structure will stay in balance. In making up its mind on this, the Treasury is always pulled two ways. If it uses short-term paper, it gets lower rates, but it has also to face an early refunding which may interfere with new financing. Long-



Brains are not a FIXED ASSET

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If you want your workers to apply their minds as well as their hands to their work, you must provide constant stimulation.

The Elliott Bulletin Board Service will help to keep your workers' thoughts on the job. It will stimulate effort, help to reduce absenteeism and accidents, improve production, maintain quality, win the willing cooperation of your workers and keep them sold on company policies. It

will make your workers think, reason, and act.

This service, which has been constantly improved over the last 30 years, is now geared 100 per cent to the war effort. Thousands of units are being used with highly satisfactory results by progressive industrial organizations both large and small. You, too, can use this practical service to good advantage.

Write for completely descriptive folder and see for yourself how the Elliott Industrial Bulletin Board Service will help to stimulate your workers to greater and more intelligent effort.

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MANAGEMENT INFORMATION

A tool to help foremen improve their production performance.

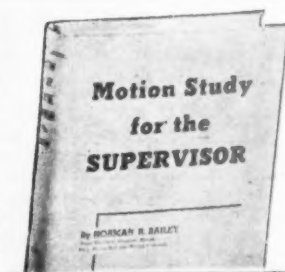
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For tapping the idea resources of your employees.

How to stop waste motion and speed up production

This book gives a simplified, practical method of motion study for analyzing operations quickly and easily, enabling the foreman to employ motion study as a useful, everyday tool in speeding production and increasing output in his department. It shows how to detect wasted effort in operations, how to recognize the cause of ineffective work, and how to develop better job methods.



MOTION STUDY for the SUPERVISOR

By **Norman R. Bailey**

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Kodak Park Works, Eastman
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JUST PUBLISHED

Now the foreman or supervisor may use motion study as easily as any everyday management process. With only a stop-watch and a simple, basic "formula", he can analyze any operation for improvement. Even operations to which it formerly was unprofitable to apply motion study may be analyzed by the simplified methods explained in this book. Here is a practical means of eliminating ineffective work and of spotting opportunities for methods improvement, with worthwhile cumulative benefits in greater production per hour.

Shows you:

- how to break down any operation into only 5 "work elements" common to all operations
- how to time an operation
- how to identify useful or wasted effort
- how to reduce repetitive motions by simple changes in layout and planning
- when to use simple fixtures for eliminating wasted effort
- how to train the operator in new methods

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Send me Bailey's Motion Study for the Supervisor, for 10 days' examination on approval. In 10 days I will send \$1.25, plus few cents postage, or return book postpaid. (Postage paid on cash orders.)

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CONTROL... From sheep's back to ultimate consumer precise specifications are set and maintained. Control all the way makes FELT a structural material with calculable properties; dependable, and readily available.

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TION ISOLATING FELTS AND INSULATING FELTS

THE MARKETS

Stocks took a back seat this week as Wall Street concentrated its attention on the Treasury's \$13,000,000,000 loan drive (page 110). Trading on the stock exchanges tapered to the lowest levels since early February, and the price averages shuffled around uncertainly, giving no indication of the next move.

• **Shakeout Unconvincing**—Although traders are still waiting for a clear signal, most of them are pretty well satisfied with the way the market has behaved in the last two weeks. Prices took a quick spill when President Roosevelt issued his hold-the-line order on inflation, but they leveled out promptly instead of touching off the long-feared reaction. As a matter of fact, the decline stopped a little too soon to please cautious traders who wanted to get a measure of the market's underlying buying power. The average of 90 stocks dropped only 4½ points in the initial shakeout, which wasn't enough to bring out stop orders placed 8 or 10 points under the highwater mark.

Railroad securities staged another mild flurry on Monday when the Supreme Court refused to review reorganization plans for the Chicago & North Western. This gives final clearance to the plan approved by the Interstate Commerce Commission and makes it probable that North Western will be the next road to come out of the reorganization mill.

• **No Real Shock to Traders**—After similar decisions in the Milwaukee and Western Pacific cases (BW—Mar. 20 '43, p. 106), the North Western ruling was no surprise to traders, but it touched off a succession of quick changes in the market for bankrupt rail securities. C. & N. W. general 6½'s shot up 7 points as soon as the news came in. Other senior issues scored comfortable, if less impressive, gains, while the juniors backed down.

Wall Street also kept an interested eye on the Tax Court of the United States which began hearings this week on the Treasury's attempt to tax income on bonds issued by the Port of New York Authority and the Triborough Bridge Authority. Bondholders argued that they should get the same tax immunity as holders of municipals. Treasury attorneys set out to prove that the two agencies are independent bodies instead of governmental subdivisions.

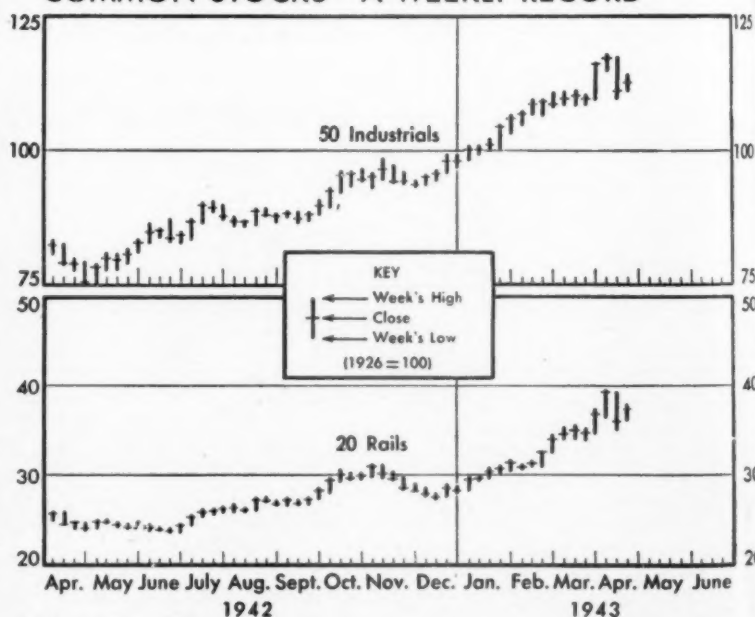
• **More and More Bills**—In the short-term money market, the Treasury boosted its weekly issue of 91-day bills by another \$100,000,000, bringing the total offering up to \$900,000,000. In the past year, the Treasury has gradually stepped up its weekly issue so that it now gets \$200,000,000 in new money on each offering. Every three months, it has to advance the total another \$100,000,000 to allow for the jump in maturing issues that results from the boost in offerings three months before. If it sticks to this schedule, the Treasury will lift its offering from \$900,000,000 to an even \$1,000,000,000 on June 16, when maturities go up from \$700,000,000 to \$800,000,000.

Security Price Averages

	This Week	Week Ago	Month Ago	Year Ago
Stocks				
Industrial ...	112.7	111.1	109.7	78.8
Railroad ...	37.4	36.0	34.8	24.8
Utility ...	45.5	44.2	42.4	28.4
Bonds				
Industrial ...	116.0	115.8	116.9	107.8
Railroad ...	97.9	96.7	95.5	88.2
Utility ...	113.6	113.3	112.1	102.2
U. S. Govt. ...	110.8	110.3	109.4	110.5

Data: Standard & Poor's Corp. except for government bonds which are from the Federal Reserve Bank of New York.

COMMON STOCKS—A WEEKLY RECORD



Data: Standard & Poor's Corp.

term bonds cost more, but Treasury doesn't have to look them full in the face again for 10 or 20 years.

Composition of Debt—So far, the Treasury has leaned fairly heavily on short-term issues, but the emphasis on sales to individuals may gradually increase the proportion of longer-term, higher-coupon bonds. At the start of the present drive, the government's direct, interest-bearing debt totaled \$114,287,345,000. Of this, Public bond issues accounted for \$49,273,666,000. Savings bonds and war bonds, redeemable on demand, came to \$17,990,701,000. Other big items were \$16,142,683,000 in Treasury notes, \$11,161,210,000 in certificates, \$9,234,428,000 in Treasury bills. Various special issues made up the balance.

A Capital Problem

Banks' swollen deposits depress capital ratio, leading to a spreading interest in sale of stock; trailblazer due.

Ever since government borrowing began to blow up their deposits, banks have been eyeing the market for their capital stocks, wondering if it could absorb new issues. This week, they watched eagerly as the New York Trust Co. prepared to take the plunge. If stockholders approve when they vote on the proposal Apr. 28, New York Trust will increase its capital by 100,000 shares, adding around \$7,500,000 to its resources.

• **Purchase Rights**—Present capital consists of 500,000 shares of common, par \$25. To float the new issue, the bank will offer stockholders rights to purchase the additional stock. Price will probably be around \$75 a share. With the current market standing at about \$90, this will give buyers a fairly generous premium.

Priced at \$75 the new issue would add \$2,500,000 to New York Trust's capital account and \$7,000,000 to surplus. This would bring total capital funds up to about \$48,000,000.

• **Capital Ratio Down**—Like the rest of the country's banks, New York Trust needs additional capital to back up its constantly expanding total of deposits. Steady purchases of government securities built up both liabilities and assets but pushed down the ratio of capital to deposits, traditional though debatable measure of the depositors' margin of protection.

At the end of 1939, New York Trust held \$419,606,000 in deposits. Its capital account stood at \$40,459,000, which gave a capital-deposit ratio of 9.6. During 1940, deposits rose to \$507,941,000, and the ratio slid down to 8.0. By the

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Handling larger volume—maximum utilization of equipment—and minimum re-handling . . . are three important reasons for the rapid rise in popularity of the Fork Truck—"Trackless Train" System.

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end of 1942, deposits were up to \$628,777,000, capital \$42,032,000, putting the ratio at 6.7.

● **The Over-all Record**—Although the records of individual banks vary widely, most of them have seen the same shift in their balance sheets during the past few years. The latest report of the Federal Deposit Insurance Corp. shows that for all insured banks the ratio of capital to total assets slipped from 8.9 to 7.4 during 1942. With even heavier government borrowing in prospect, bankers know that the downtrend will continue.

Government officials have already assured the banks that they don't have to cling to the hallowed ratio of \$1 of capital for every \$10 of deposits. According to the new theory, the real indicator of sound management is the ratio of capital to "assets at risk." Since government bonds count as riskless assets, most banks would show comfortable protection on this rating.

● **What Should the Ratio Be**—However, everyone realizes that the ratio of capital to deposits can't go on diminishing forever. Bankers say that even with government securities in a separate class, there has to be some margin of capital coverage. In this they have had the enthusiastic and somewhat belligerent support of FDIC Chairman Leo T. Crowley, who is afraid that banks will work themselves into the position where they can't take any risks because they have no capital to underwrite investments that might go bad.

As long as the stock market was flat on its back, about all Crowley and the bankers could do was wish that things were different. Bank stocks rate well with investors, but the market is highly selective, and prices have been close to the bottom for several years. The American Banker's index of New York City bank stocks never got above 29.9 in 1942, and in 1941 the high was 37.9.

● **Results Awaited**—With the revival of the market this year, banks have their first chance to do a little cautious experimenting with new issues. This week the index got up to around 37, the highest level since 1941. If New York Trust hits the jackpot on its flotation, several other banks will probably try to pull up their capital ratios by following its example.

U.G.I. VOTES TO DISSOLVE

Securities dealers and bankers felt a sentimental twinge last Monday when stockholders of United Gas Improvement Co. approved its plan for corporate suicide (BW—Jan. 9'43, p. 85), but they consoled themselves by thinking of the impending distribution of new securities. Next step is recapitalization of U.G.I.'s subsidiary, Philadelphia Electric. Then, U.G.I. will hand out new securities and cash as a partial liquidating dividend.

THE TRADING POST

On Personal Incentive

Many Americans who listened recently to Prime Minister Churchill's Sunday afternoon address marked several passages that seemed to fit very patly our own situation. One of these, on the subject of taxation, reads as follows:

"This brings me to the subject of the burden and incidence of taxation. Direct taxation on all classes stands at unprecedented and sterilizing levels. Besides this there is indirect taxation raised to a remarkable height.

"In wartime our people are willing and even proud to pay all those taxes. But such conditions could not continue in peace. We must expect taxation after the war to be heavier than it was before the war, but we do not intend to shape our plans or levy taxation in a way which, by removing personal incentive, would destroy initiative and enterprise.

"If you'll take a single year of peace and take a slice through the industry and enterprise of the nation, you will find work which is being done at the moment, work that is being planned for the next year, and projects for the third, fourth, and even fifth year ahead which are all maturing.

"War cuts down all this forward planning and everything is subordinated to the struggle for national existence. Thus, when peace came along suddenly as it did last time, there were no long carefully prepared plans for the future. That was one of the main reasons why at the end of the last war after a momentary recovery, we fell into a dreadful trough of unemployment. We must not be caught again that way.

"It is therefore necessary to make sure that we have projects for the future employment of the people and forward movement of our industries carefully foreseen, and secondly that private enterprise and state enterprise are both able to play their parts to the utmost.

"A number of measures are being and will be prepared which will enable the government to exercise a balancing influence upon development which can be turned on or off as circumstances may require. There is a broadening field for state ownership and enterprise, especially in relation to monopolies of all kinds. The modern state will increasingly concern itself with the economic well-being of the nation, but it is all the more vital to revive at the earliest moment a widespread healthy and vigorous private enterprise without which we shall never be able to provide in the years when it will be needed the employment for our soldiers, sailors, and airmen to which they are entitled after their duty has been done."

"... Not to the Strong Alone"

The Jacques Kreiser Mfg. Corp., North Bergen, N. J., is a peacetime manufacturer of watch bands and jewelry. Like many another such business it now is engaged principally in war production.

But its contribution to the war effort is not limited to the gadgets it turns out. Kreiser has been working out an experiment in tapping an unused source of manpower for the war job.

It began when Kreiser hired James Cassidy as a timekeeper. Cassidy was physically handicapped, and when he later was put in charge of personnel, he suggested that the company consider for employment other handicapped people.

Through the Rehabilitation Bureau in Jersey City he got his first group. Gradually he added to his staff until now he has between 35 and 40 handicapped people. One shift of one department is made up wholly of handicapped men.

The company reports that these employees not only have made good, but also have helped to boost production in their respective departments and for the plant as a whole by actually pacing their more fortunate fellow-workers. Among the handicapped, not one person has lost one day from his duties at the Kreiser plant. Some who had been dependent are now supporting their families.

The Kreiser officials hope that this demonstration of the skill and efficiency that can be attained by physically handicapped workers will serve not only to meet the current manpower emergency but also to throw new light on the rehabilitation of so-called unemployables.

* * *

A similar move is announced by the Gray Mfg. Co. of Hartford, which recently advertised in the Hartford newspapers an invitation to disabled service men to apply for "jobs open from time to time which you may be able to fill."

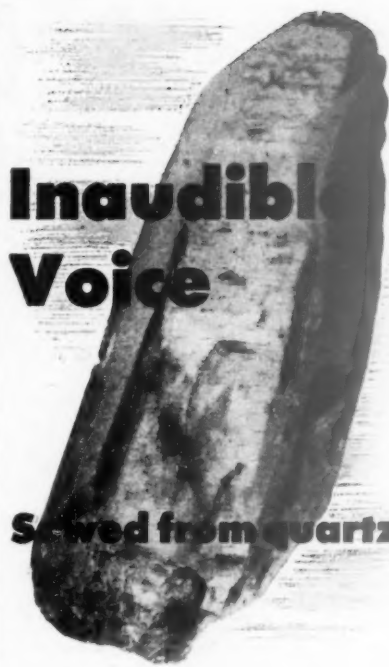
The company explains to the service men that its desire to get them "into production" is not based on a sense of obligation but on "the cold, hard fact that we know you want to continue to work for victory" and that "we and the country need your continued help."

The Gray Co. has sent reprints of its advertisement to other industrial employers in the hope that they may be sufficiently interested to follow suit.

Such measures offer a double return: They not only tap a new source of manpower to help meet the war need, but also awaken in many who may have written themselves off as chronic dependents a new realization that with a little patient training they once again can stand on their own feet.

W.C.

Inaudible Voice



Saved from quartz

Wherever our armed forces are in operation, tiny wafers of Brazilian quartz perform a modern miracle of science. Cut to precision dimensions with Di-Met diamond abrasive wheels, they inaudibly vibrate millions of times per second and stabilize the frequency of radio signals to predetermined limits, thus maintaining constant, dependable contact with headquarters in any part of the world.

Di-Met Rimlocks are extensively used not only on quartz but on all other non-metallic materials of similar dense structure. Applications are readily made on ceramics, porcelain, tile, clay products, glazed face brick, vitrified materials, steatite, etc.

If your manufacturing process requires cutting-off operations on materials of similar composition, try Di-Met Rimlocks. They're made in two bonds — copper and steel — in even diameters from 4" to 24". A 3" size is the smallest regularly made.



THE TREND

THE PRICE OF EFFICIENCY

Many business men, as well as statesmen and economists, have set up full employment as the postwar goal—as the keystone of stability in the social-economic structure. But to support full employment requires higher and higher levels of production.

Rarely are we exposed so forcefully to the realization of this fact as in a new book by Solomon Fabricant of the National Bureau of Economic Research, "Employment in Manufacturing, 1899-1939." Here is the 40-year picture painted by Mr. Fabricant's indexes (1899=100):

Year	Output	Employment		Wage	Man
		Wage Earners	Man Hours	Earners per Unit of Output	Hours per Unit of Output
1899	100	100	100	100	100
1909	158	139	134	88	85
1919	222	188	164	84	74
1929	364	187	156	51	42
1939	374	176	121	47	32

Over the 40-year span, man-hour productivity tripled, and, despite a shortening of work-weeks, per-man output doubled. And, in 1929, after a decade of the sharpest expansion in production, we were employing fewer workers fewer hours than in 1919.

• Nor is this picture distinctive of manufacturing. Another National Bureau work, "American Agriculture, 1899-1939: A Study of Output, Employment, and Productivity," by Harold Barger and Hans H. Landsberg, reveals that in agriculture output rose steadily between 1900 and 1940, by 59%; employment per unit of output dropped steadily, by 48%; and employment, after rising 6% from 1900 to 1910, thereafter began to decline and had dropped 16% from the 1900 level by 1940.

Similar results, though with less refined measurements, can be shown for transportation, mining, and electric power. And though trends for trade and service lines are more difficult to fix, similar increases in efficiency are nonetheless clearly evident from available data and from experience in these lines.

• The disparities in movement of production and employment are, to say the least, stimulative of economic thinking. And Mr. Fabricant's studies of individual industries are highly suggestive of the interrelating mechanism. He finds a significant association between increases in total production and total employment and declines in man-hours, labor costs, and selling prices per unit of output. As one might expect, those industries that boosted efficiency and cut prices grew most sharply. What's more, "There has been a tendency for capital assets per worker to rise more rapidly in growing than in declining industries."

To this might be added another familiar conclusion, which Lowell J. Chawner put thus in the May, 1942, Survey of Current Business, published by the Dept. of

Commerce: "New technological methods exert a very strong influence upon the rate of capital expenditures."

And this last factor, the rate of capital expenditure for new facilities, is regarded by many as all-controlling for the health and prosperity of the whole economy.

Thus, technology plays a double role. The competitive drive for economic survival is to cut costs and boost efficiency by resort to labor-saving capital equipment. And, with the possibility of such savings varies the job-creating rate of investment.

• To be sure, it is precisely our problem that the technological process of job-destruction and job-creation is not self-balancing. For one thing, as the mechanization of industry proceeds, there is less and less labor to be replaced by machines; in the long-run, there is less and less to be gained from devices of specified labor-saving. This trend may be offset by short-term factors, such as the jump that wage rates have taken in recent years, or it may be accentuated by taxation policies which permit less profit than formerly from new investment risks.

Conclusions from all this that contribute to an economic policy to solve the dilemma may, in some cases, be unanimous; in others, they are highly arguable. But, in the postwar world, whatever hope we may put in new technology, we must face squarely the consequences of past technology.

Since 1939, the number of man-hours worked in manufacturing has doubled. So has production—though it is less intelligibly measurable over a short span, particularly in a period of such great shifts from peace to war products.

Actually, what some call a "wartime revolution in technology" has occurred. But war forces the use of marginal resources, dilutes the labor force with inexperienced reserves, and calls for more man-hours of fabrication than peace—75% more in metal-working according to a Dept. of Commerce estimate. When peace returns, and these temporary factors disappear, wartime advances in machines, methods, and materials will stand fully revealed.

S. Morris Livingston makes an attempt to assess their meaning in the April, 1943, Survey of Current Business. Assuming the war and reconversion periods to be over, he estimates that by 1946 we will need 8 million persons less to turn out the equivalent of our 1940 gross product. Adding in an actual unemployment of 9 million in 1940, and a normal growth of 2.5 million in the number of job-seekers, nearly 20 million people will be unemployed if we produce in 1946 no more than we did in 1940.

• These are the dimensions of the problem. Full employment for the better part of those 20 million will require an overhauling of our sights, a real understanding of our economy, and a thorough appreciation of the price of efficiency.

The Editors of Business Week

Business Week • April 24, 1943

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